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LISTER CENTENARY.
1827–1927.

THREE DISCOURSES

DELIVERED ON WEDNESDAY, APRIL 6TH, DURING THE LONDON CELEBRATIONS.

LISTER AS A PHYSIOLOGIST.

BY

SIR CHARLES S. SHERRINGTON, O.M., G.B.E., M.D., F.R.S.,

WAYNFLETE PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF OXFORD.

THE invitation has been extended to me to offer a few words about the contributions made by Lister to physiology. Lister's very earliest scientific papers were all physiological. Indeed, he may be said to have entered by way of physiology on his surgical researches, which were to achieve so much.

SMOOTH MUSCLE.

His first paper was on the "Contractile tissue of the iris." Work done with the microscope, which he used for the study of function rather than of form alone, it appeared in 1853 in the first number of the first volume of the now well known *Quarterly Journal of Microscopical Science*. Lister was then 25 years of age, and that his maiden voyage of discovery should employ the microscope was but natural in the son of Joseph Jackson Lister, that remarkable man, who, leaving school at the age of 14 for the business he conducted so successfully, had yet found time to cultivate optics to such purpose as to give the world the achromatic microscope. This, Lister's earliest paper, on the iris, supplied the first full and correct description of the radiating muscle dilating the pupil. It thus made a lasting mark upon its subject.

Lister's second paper, of a few months later, dealt likewise with involuntary muscle; this time in the skin, where Kölliker had recently discovered the arrector muscles of the hairs; this discovery Lister confirmed, and in several respects extended.

We may be struck by the remoteness of these, Lister's first themes, not only from surgery, but, indeed, from actual practice; they are academic. I think we have to picture him a young man to whom what really mattered was engagement on research, and less at that time what in particular the research might be: a young man so ardently curious about nature, especially animate nature, that he turned with enthusiasm to the problem that came first to hand. And these papers in the simplicity of their text recall something of the upbringing in Lister's Quaker home. There is already the sobriety of expression which, characteristic of Lister all his life, made yet the more impressive his own self-restrained statements of his great results later on. No man in his career had more excuse for, more justification for, hyperbole of phrase than had Lister, and no man ever indulged in hyperbole less than did he. It is therefore of significance when in these early papers the young author allows himself an expansive adjective, as for instance when he writes "the grand discovery of plain muscle-cells," "the beautiful muscle of the iris." We feel these expressions to be from him not mere phrases. An abiding interest of these papers is that they reveal points in Lister's so to say original nature; and among these are penetrative and faithful observation, a catholic enthusiasm for research, a restless testing of authority by observed fact, an unhesitating self-submission of opinion to whatever the truth might assert, the fear of nothing except missing the truth.

His third paper, still physiological and on the same theme, smooth muscle, followed some four years later. The cellular nature of that tissue had been denied; Lister returned to its further proof. He furnished it overwhelmingly. Forty years afterwards the then foremost authority on this tissue wrote of this paper of Lister's as being still not only abreast, but in several respects ahead, of other subsequent papers on its subject.

This work was Lister's farewell contribution to that particular theme. Much had by then happened and was happening to him to compel his main interest elsewhere; in short, his scientific enthusiasm had definitely orientated its search in the great field of the unknown. His spirit of inquiry had found a direction of compelling interest to it, a lodestar of overpowering attraction. In his own words, written to his father, he had fallen in love with surgery. And with that wide, though unified, field enchantedly before him, the genius within him pointed to the prime and all-pervading problem in that field as being, not this or that particular skill or operation, but the fundamental process and reaction of inflammation itself.

NERVOUS CONTROL OF ARTERIES.

Henceforward his physiological research became merely collateral to the pathological study engaging his main thought. Thus it was with his paper on the nervous control of arteries, distinguishing between the immediately local and the more distant effects of a stimulus, and especially of an irritant stimulus upon the blood vessels. The local effect, he concluded, was independent of the nervous system, but with a surrounding zone of effect mediated by nerve—a finding closely suggestive of present-day views. Another paper was that on the pigment cells of the frog's skin—those cells on which the animal's well known colour changes depend. Lister concluded the shift of pigment to be a shift of the pigment grains within the cells themselves, and the way in which he consolidated and marshalled his evidence for that is a striking instance of his thoroughness as an investigator. There is little doubt that from detailed study of these pigment cells Lister gained much

of that vivid and intimate conception of cell life struggling against irritant agents which directed his surgical strategy afterwards.

INHIBITORY ACTION OF VISCERAL NERVES.

Another of his physiological investigations concerned the inhibitory nature of certain visceral nerves. He wrote: "I have been led to make an experimental inquiry into this 'so-called inhibitory agency' because it appears to me to have an intimate bearing upon the question how inflammation is developed through the medium of the nervous system at a distance from an irritated part." His main conclusion was that inhibition resulted from more energetic action of those same nerves which when working mildly produce increased action.

Then, more closely related still to his pathological inquiries, followed two papers on clotting of blood, confirmatory, as he himself remarks, of his conclusions arrived at about inflammation. These papers and the year 1863 practically concluded the tale of Lister's researches devoted directly to physiology. Perhaps their main interest now is their revelation of their author in his earliest research career. Conspicuous in them is capacity for noting detail and the rarer power of sifting out from the detail its broader meanings. Another of their qualities is a voracious appetite for seeing for himself phenomena many would be content to take on trust from the excellent descriptions given by others. Lister was satisfied by nothing less than seeing for himself, and his eye never staled. Moreover, even at this stage, though he might appear engaged on diverse problems, he was in fact centred upon one problem, of which from his point of view the several were but several aspects. Thus, these early papers show that in reality quite early in his career he had not only found but had whole-heartedly flung himself upon what was to be his life-work and his life's problem—a problem we may almost subsume under the one broad term "inflammation." That was the study which he was to follow to a practical solution so magnificently, and in doing so exhibit what these earlier papers had less opportunity for showing—the splendid power of establishing, and systematically following through its consequences, a great generalization. Hence from these earlier researches we can see spring that triumphant career of experimentation and observation, in the laboratory and the ward, which, with a really surprising speed of mastery, winged Surgery for that which she is to-day—a far-flighted angel of healing the civilized world over.

ANTISEPTIC SURGERY IN PHYSIOLOGICAL EXPERIMENT.

But these papers whose features we have been examining far from exhaust the gift made by Lister to physiology. In addition to and beyond them he enriched it with the contribution of enhanced means towards its own most cherished aims. He put into the hands of physiology for all time a superlative refinement of its method, and made possible observations otherwise impossible. Sir Berkeley Moynihan has eloquently insisted on the importance of surgery as a means of discovery. In physiology, how could Pavloff have achieved his epoch-opening study of the digestive processes except by leaning upon Lister's surgical principles? Ferrier initiated his study of localization of cerebral function by means of Lister's surgical principles. How could the physiologists of Toronto, less than four years ago, have bestowed upon diabetic sufferers that merciful remedy insulin, had it not been for the legacy of operative principle and science bequeathed to them and to the whole world by Lister?

And Lister's own words leave us in no doubt as to what a source of rejoicing it was to him that among benefits accruing from his work was this one, an enhanced scope and power for physiology and experimental medicine. He dwelt both in public and in private upon the need and importance of such experimentation for the progress of knowledge necessary to civilization. He rejoiced that he had contributed to its power. And indeed the experimentalist owes to Lister an instrument of research whose beneficent future the boldest imagination may well halt to set limit to.

And of the gifts of Lister to humanity one which the experimentalist is with especial gratitude ever mindful of is that, while helping man to mastery over disease alike for animal and man, he contributed to free that necessary experimentation from the infliction of pain. Man, sacrificing animal life as he does to satisfy the material needs of humankind, has the right to regard the intellectual need impelling him to search means of saving human and animalkind from disease as justified in its resort to animal experimentation. He does so with the less heart-searching and with clear conscience because largely owing to Lister he can do so without inflicting pain and suppuration.

Thus it is that through years to come, after indeed it may be that the actual papers contributed to physiology by him may have become matter chiefly for the historian and the antiquarian, Lister will still receive unfailingly his meed of commemoration from the physiologist and experimentalist, and in a manner which to himself would, of all ritual and offering, have been the most congenial—namely, in their daily observance and trust of methods which he discovered and inculcated, and in their practice for the alleviation and prevention of disease. It is therefore with peculiar gratitude that Physiology brings its tribute of admiration and veneration to the memory of one great even among the greatest of the benefactors of humanity, Joseph Lister.

LISTER AS A PATHOLOGIST AND BACTERIOLOGIST.

BY

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WE are met to commemorate the centenary of the birth of Lord Lister, and I have been asked to address this representative gathering on his contributions to pathological science.

Proud as I am of the great honour which has been bestowed on me, I am painfully conscious of my own imperfections and limitations for such a task. My qualifications are twofold. In the first place, I have read all Lord Lister's writings and have made a critical study of some of them, not only to discover their intrinsic merits, but to compare them with similar studies of his predecessors and contemporaries.

In the second place, I had the great privilege of knowing Lord Lister for thirteen years, and in a manner which, considering the great disparity of our positions, was, if I may presume to say so, almost intimate. As bacteriologist to the British Institute of Preventive Medicine I had to visit Lord Lister, the chairman of the Institute, almost weekly in order to report to him the progress of the work in the antitoxin department. After I left the Institute he frequently asked me to call upon him to discuss various scientific problems in which he was interested. In this way I was a good deal in his company, and among the younger men of that day I probably saw as much of him as anyone else.

When I first knew him, in 1895, he was 68, and I frequently saw him down to 1907. I last saw this great man in a bath-chair by the roadside at Walmer on a lovely sunny morning—December 26th, 1909. He was then 82 and was approaching the lonely end of his splendid career. Both then and now he stands out to me as a most impressive personality. I have known very many of

the leaders in our profession at home and abroad during the last thirty years, and have no hesitation in placing him *facile princeps Medicorum*.

Up till old age he continued to be deeply interested in all medical advances and was almost young and boyish in his enthusiasm. Although leading a busy and strenuous life, he was still striving to keep abreast of bacteriological literature, which at the time was pouring forth in an unbroken stream. On several occasions I was hours in his company trying to unravel the intricate papers of Ehrlich and Bordet on the nature of haemolysis or the constitution of diphtheria toxin. Our hour of work finished, he would relax into reminiscences of his life and work, the difficulties he had to contend with, and how he had overcome them. On one such occasion—the date was October 23rd, 1905—he referred in great detail to his work on pigmentation of the frog and on inflammation, and he said to me—I wrote the words down at the time—"If my works are read when I am gone, these will be the ones most highly thought of." These were not the mumblings of senility, for he was still alert and fresh, but I took it to mean that he wished to be regarded as a scientist rather than as a surgical craftsman, notwithstanding his pre-eminence in the latter branch of human activity.

It is therefore a peculiar pleasure to me to have to refer to some of these contributions which he himself prized.

In estimating Lord Lister's scientific work, it is essential to remember that he had no properly equipped laboratory as we understand it to-day. His laboratory was his study in his private home, and perhaps the best part of his scientific work was that done in 11, Rutland Street, Edinburgh, during his first stay (1853-60) in the northern capital. To this period belong the papers on pigmentation of the frog (1857), the function of the visceral nerves (1858), the coagulation of the blood (1858-63), and the early stages of inflammation (1857). The construction of his antiseptic system took place mainly in the Glasgow period, 1860-69, while his chief bacteriological studies are to be referred to the second stay in Edinburgh (1869-77), when he resided at 9, Charlotte Square.

The hours for his scientific work were early in the morning and far into the night, following a harassing day of active surgery in private or in hospital. He undertook his experimental work so that he might speak with first-hand knowledge of the themes he had to teach. Many of the problems, although of paramount importance practically, were obscure and complicated. Some were not capable of solution then, others have not yet been definitively settled.

Coagulation of the Blood.

The coagulation of the blood has at all times excited wonderment, and the theories to explain the process have been innumerable and are still being brought forth. In this country very notable advances were made in the eighteenth century by William Hewson, who unfortunately died before he was 35. He proved that the red blood corpuscles were bi-concave discs; he discovered the white corpuscles and performed a large number of admirable experiments to explain the process of clotting, although he never quite cleared up the mystery of its nature. His successors in the nineteenth century were not more happy. Coagulation was early studied by Lister, as it was constantly being brought to his notice in connexion with closure of the vessels, putrefaction, and secondary haemorrhage in surgical wounds. When Lister began, the prevailing theory was that of B. W. Richardson, who referred coagulation to the escape of ammonia, which was believed in some way to hold the coagulative elements normally in solution. In a long series of experiments conceived and carried out in masterly fashion, Lister showed that the ammonia theory was untenable. He clearly saw the necessity for separating the nature from the cause of coagulation, and while baffled with the former he revealed by his experiments that the latter—the cause of coagulation—is really due to the influence exerted on the blood by the contact, even momentarily, of ordinary matter of some kind. He considered that this contact brings about a reaction between the solid and fluid constituents of the blood, so that the corpuscles imparted to the liquor sanguinis the disposition to clot. As regards the cause of clotting, it cannot be said that we have materially advanced during the seventy years since the publication of Lister's work.

Early Stages of Inflammation.

Another basic pathological process which he studied was inflammation. The extraordinary changes which we call inflammation have always attracted attention, and the explanations given constitute a large part of the history of medical doctrines. When Lister began to study inflammation there was already a considerable mass of accurate knowledge on the subject. The older pathological anatomy, so ably created by Morgagni and followed up by the French school down to the time of Cruveilhier, was being replaced by the new knowledge which accrued from the discoveries of Schleiden and Schwann. At the time Edinburgh was a great centre of medical activity and a nursery of medical talent. Many of her graduates migrated across the border to attain fame in the arenas of the South. I need only mention names like Richard Bright, Hodgkin, Thomas Addison, C. J. B. Williams, Marshall Hall, and two who had a marked influence on Lister's life at University College and afterwards—I refer to William Sharpey and the exceedingly able if eccentric Wharton Jones. Their work was carried forward by Augustus V. Waller and the little known but highly successful worker William Addison. In the inflammatory process the margination of the leucocytes was taught by C. J. B. Williams and W. Addison in 1841. In 1846 Volnay Waller rediscovered the wonderful process of emigration of leucocytes, previously known to Dutrochet (1827). In a most scholarly manner Wharton Jones summed up all the knowledge on inflammation down to 1846, and himself gained the Astley Cooper prize in 1850 for his splendid essay on the pathology of inflammation.

When, therefore, Lister began to study the process he was traversing ground already trodden. He early realized, however, that much that had been done concerned the later stages of inflammation, whereas its real essence was most likely to be found by analysing the earliest changes. Examining the frog's web and the bat's wing, he took elaborate precautions that they should be in a perfectly healthy condition. By the application of irritants he passed to the study of the morbid, and investigated especially the aggregation of the red corpuscles, their increased adhesiveness, and the structure of the arterioles and capillaries. He found that the capillaries alter in size, but referred the change to something inherent in their elasticity. While admitting the existence of contractility in the capillaries, modern writers have not accepted his explanation. Lister regarded irritants as acting in a twofold manner. The primary effect was a dilatation of the vessels, brought about through the influence of the nervous system and not limited to the *locus* of the irritant. The secondary effect, on the other hand, was the direct outcome of the irritamentum itself, in consequence of which the blood becomes altered physically. The red discs become more adhesive, they accumulate in masses, and may bring about a condition of actual stasis. Strange to say, Lister made no reference to diapedesis of the leucocytes, and probably missed it altogether. The earlier discovery of Waller had left, apparently, little impress on the knowledge of the day, so that when Cohnheim described diapedesis in detail in 1867 the discovery was looked upon as something altogether new. It is to Lister's credit that he discussed inflammation from a new point of view, which Cohnheim nine years later carried to a conclusion.

Bacteriology.

When Lister embarked on his extended study on the cause of suppuration and the complications which follow surgical operations, his previous work on blood and inflammation was a great help to him. He was continually groping for the causes of the surgical disasters which were habitually happening, but light began to peer through the obscurity. This was early during his Glasgow term. In

1865 his attention was directed by a colleague to the work which had been done on fermentation and putrefaction by Pasteur from 1857 onwards. This work came upon him as a revelation, and almost at once he grasped the full significance of the Frenchman's discoveries for surgery. Ten years later he tells us specifically that the work of Pasteur "long since made me a convert to the germ theory, and it was on the basis of that theory that I founded the antiseptic treatment of wounds in surgery."

Although he frequently reiterated his indebtedness to Pasteur, it is, I think, a vulgar error to regard Lister as a mere imitator of his great French contemporary. As early as 1861, and before his acquaintance with Pasteur's papers, he was getting near the truth about suppuration, and afterwards he advanced beyond the point where Pasteur had led him. From now on he became ardent in the pursuit of bacteriology. This was about 1870, when the study of microbes had scarcely emerged as a distinct science. At the time there were two conflicting views. The one, supported particularly by the eminent botanist Ferdinand Cohn, held that bacteria exhibited a constancy in form which might be used as a basis of their classification into genera and species.

According to the other view, there is no such morphological stability, but rather a pleomorphism whereby one and the same microbe could assume different forms according to the environment. In his earliest bacteriological work in 1873 Lister ranged himself among the pleomorphists, and it has to be admitted that he suffered shipwreck when he stated that Ehrenberg's and Cohn's classification was "entirely untrustworthy." Lister's mistake was one made by a great many others at that time, and serves but to show how unwary the earlier bacteriologists were of the pitfalls lying in their path. There exists an exceedingly interesting correspondence which passed between Lister and Pasteur on the subject. Pasteur clearly saw where Lister had erred and advised him to repeat his experiments with added precautions. This, Lister did, and, profiting by his new experience, became one of the foremost bacteriological technicians and pioneers of his time. So imbued was he with lofty ideals that, instead of covering up his tracks, he handsomely admitted his error. "Next to the promulgation of truth," he said, "the best thing I can conceive that a man can do is the recantation of a published error." This sentiment was almost exactly that which was given to us sixteen hundred years ago by Celsus, who, however, added that "such a confession is suited only to a great genius whose splendour is such as to survive the sacrifice, especially in the performance of a task which is to be handed down for the benefit of posterity as a beacon of truth to warn them against similar errors." From the theory of Cohn and Pasteur it was to be presumed that in some way—at that time unknown—bacteria might be separated from each other and cultivated in a pure state. The great mycologist Brefeld early pointed out the necessity of raising pure strains or cultures from one single germ. Lister attempted this, and by unsurpassed technique, involving a remarkable understanding of the whole problem, he succeeded in obtaining a pure growth of a microbe which he called *Bacterium lactis*, and which was a cause of the so-called lactic fermentation. He grew the microbe in sterile milk and raised a pure strain, constant morphologically and physiologically, from a single bacterial cell. This was possible by the aid of an ingeniously constructed syringe of his own invention.

He also introduced several of the methods of sterilization which are in constant use to-day. His work on lactic fermentation is a classic, and stands as a model of what a scientific research should be.

Like Pasteur, Lister had the supreme faculty of seeing as if by instinct the exact experiment required to eliminate an element of doubt or to advance ahead. He was a master of the experimental method—a rare and precious gift which the Abbate Spallanzani truly said "has always been confined and always will be confined to the few."

And now I am at the end. No one could come into contact with Lister without being impressed by his noble personality, his magnanimity, his liberality, and his modesty. His aims were of the loftiest kind, and probably no medical man ever kept more steadfastly before his gaze the covenants of the Hippocratic Oath. He venerated his teachers, he taught his art to his pupils, he kept nothing secret from his profession, and followed that system which, according to his ability and judgement, he deemed best in the interest of his patients. With purity and holiness he passed his life and practised his art.

When one looks down the long vista of time and contemplates the art of medicine, three names stand prominent, and we should all feel pride in our English stock which gave birth to Harvey, to Jenner, and to the great Lister—a name to resound for ages.

LISTER AS A SURGEON.

BY

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SELDOM is a great discovery the product of one man's mind. In the work of other men it has ancestors; forerunners possessing one or more attributes whose final and felicitous association within new work constitutes new truth. When that new truth is fully disclosed its relation to many other truths familiar to all for perhaps many years and in many associations becomes clear. The claim may then arise that those who have revealed isolated and antecedent truths have priority in the final discovery. Such truths are, however, only progenitors with no claim to be regarded as their own descendant, the new truth itself.

SURGERY A CENTURY AGO.

The immortality of Lister, whose centenary we commemorate to-day, is due to discoveries which did for the craft of surgery what John Hunter had done for its science. The oldest human remains bear evidence of surgery. Before Lister came operations had been relatively few because of their heavy mortality and their almost insupportable burden of terror and of suffering. Every operation risked the life of the patient from one single cause—putrefaction in the wound. So frequent was this that it was always expected; and whenever it appeared no man might foresee or measure its consequences. Evidence of this we find on almost every page of the old textbooks and in the biographies of the great surgeons. It is startling to read that when, in the year 1821, Astley Cooper operated upon George IV for a small sebaceous cyst on the head, so tortured was he by anxiety lest erysipelas or pyaemia might develop that he sought to put upon others the responsibility of the operation—on Cline, on Everard Hume, on anybody but himself. He speaks of the operation in terms which to us now appear absurd, fearing that "it might by possibility be followed by fatal consequences." He says, "I saw that the operation, if it were followed by erysipelas, would destroy all my happiness and blast my reputation"; and "I felt giddy at the idea of my fate hanging upon such an event"; and again, "I am certain that if anything happened to the King that at any rate I should leave London and live in retirement." It is hard to believe that a surgeon eminent enough to be chosen for service to the King should be so deeply moved at the prospect of what was to him, as to us, technically the simplest of operations. The exercise of the art of surgery brought terror then where it now brings joy, to surgeon no less than to patient.

THE FIRST STEPS.

Lister's discovery was very gradual. His earliest interests in surgical inquiry were concerned with inflammation, its cause, its nature, and possible methods of controlling it. In this, as in many of his earlier investigations, Hunter was both inspiration and guide. His paper "On the flow of the lacteal fluid in the mesentery of the mouse," published in 1857, but based on researches begun in 1853, is an extension of Hunter's experiments on absorption. His studies on coagulation of the blood began with an investigation on the blood in the veins of sheep's "trotters" obtained from the slaughterhouse. By devising neat and critical experiment he was able to carry knowledge of coagulation of the blood far beyond the point which Hunter and Hewson had attained a century before. Yet the methods he employed were clearly modifications of those used by his great forerunner. By such investigations as these Lister was training himself, but his chief interest lay always in the problem of the healing of wounds. When, therefore, he learnt of Pasteur's researches his mind was open to the new truths and expectant of them. Before the British Medical Association in Dublin in 1867 he said:

"In the course of an extended investigation into the nature of inflammation, and the healthy and morbid conditions of the blood in relation to it, I arrived several years ago at the conclusion that the essential cause of suppuration in wounds is decomposition brought about by the atmosphere upon blood or serum retained within them; and, in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury. To prevent the occurrence of suppuration, with all its attendant risks, was an object manifestly desirable, but, till lately apparently unattainable, since it seemed hopeless to exclude the oxygen which was universally regarded as the agent by which the putrefaction was effected. But when it had been shown by the researches of Pasteur that the septic properties of the atmosphere depended not on oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air by applying as a dressing some material capable of destroying the life of the floating particles."

Lister's first step was therefore a realization of the truth that decomposition in wounds depends upon the activity of living micro-organisms; his second, which followed immediately, was based upon the belief that such organisms might be destroyed in the wound, or as they were about to enter the wound; his third and last, which came more slowly, was founded upon the hope that the organisms within the field of operation might be destroyed before they entered the wound.

Around every step of his advance fierce controversy raged. The scepticism and hostility of early contemporaries was stupid, unimaginative, and petty. The history of science is not only the story of new truths and their slow emergence from error, it is a recital of bitter and vexatious opposition from those who should have been the first to acclaim and to welcome the new vision. Only a few weeks ago we learnt once again of the diffidence of Isaac Newton in the publication of discoveries made years before; his reluctance was due in part perhaps to a native modesty and indifference to the applause of others; in part also to shrinking of a sensitive nature from the acrimony and coarseness of controversy.

The rank hostility of Riolan to Harvey, the disdainful incredulity of Liebig at the discoveries of Pasteur, are in direct intellectual relation to the revolt of Calvin at the discoveries of Servetus, the animosities of the Church which martyred Giordano Bruno, the threat of torture which subdued the aged Galileo, and all that long record of sinister events which proclaims the inveterate hostility of impervious minds to novelty. For such minds novelty is always error, truth is bent through an angle of refraction as it enters them. Lister's answer to indifference, opposition, and denial was unfaltering continuance in inquiry and experiment, and in the demonstration day by day and case by case of changed results.

THE PAST RENEWED IN THE WAR.

Few if any now living remember the full horror of the old days. But an experience not dissimilar awaited us in the earliest days of the great war. A pestilence of infection to which we were wholly unaccustomed turned our faces towards the early struggles of Lister. On all sides we heard that our inability to check a raging suppuration in a heavily infected wound proclaimed the failure of Lister's methods. So to Lister we turned again, only to realize much more acutely how the problems which faced us had been his problems; how our experience, horrible in its new revelation, had in the first years of his practice been his daily experience. Reading Lister's works with clearer perception and new understanding of the difficulties by which he was confronted, our admiration of his patience, insight, and courage glowed into greater reverence than ever before. Lip-service we had long given to the founder of the new era; we were now compelled to realize that Lister is indeed the man who has saved more lives than all the wars of all the ages have thrown away; the man who has changed the face of surgery, the one man who has in truth created, if not a new art, at least new and safe, and illimitable opportunities for the practice of the old art.

The first conception in Lister's mind in respect of treatment was that the organisms within the wound, and those entering the wound, might be destroyed by some chemical agent the nature of which was to be determined by a series of experiments. From time to time changes were made as search brought to light some new chemical substance more active in destroying bacteria and less harmful to the living tissues of man. The search is not ended yet. Up to this moment it has engaged the interest of such men as Dakin, Browning, and J. B. Cohen, and no doubt it will long continue. The problem, however, is not merely that of accomplishing highest bacterial destruction with lowest cellular injury: it is rather one of augmenting the natural powers of cells and of serum to subdue and destroy bacteria and their poisons. Lister, I feel confident, realized all this to a greater degree than many of his successors. Godlee in his Life of Lister makes this quite clear. Though the earliest efforts were concerned with the abatement of existing decomposition of wound discharges, it was not long before the problem of the prevention of infection became paramount. It is beyond dispute that Lister clearly realized the distinction between the "prophylactic" and the "therapeutic" uses of chemical agents in surgery. We know now that the old quarrel as to the relative merits of the "antiseptic" and the "aseptic" methods was senseless and jejune: for Lister was indubitably the parent of both—if, indeed, there are really two methods. No surgeon ever practised with success a method in which agents for the destruction of organisms were omitted. Aseptic surgery is the wise practice of antiseptic surgery. There is a difference in detail, not in ideal or in fundamental truth.

We have no need to discuss the relative merits and claims of Pasteur and Lister. It is true that without Pasteur there would have been no Lister at the time when Lister was. Pasteur set out to discover the truth as to spontaneous generation, and by crucial and magisterial experiment settled that problem once for all. While at Lille, in the centre of a district of many distilleries, the problem of fermentation engaged his mind, and the assertion of Liebig, foremost among chemists of his day, that it was "a change in organic fluids and tissues set in motion by the access of oxygen" was shown to be incomplete. The genius of Lister lay in immediate realization of the fact that the biological truths established by Pasteur might be applied to other circumstances. His mind was prepared for the new vision by his physiological training. I make no attempt to exalt Pasteur by saying that Lister's work was corollary to his; nor to belittle Pasteur by speaking of his ignorance of the full effect of his work. Let the world be thankful for both. We who are within the profession of medicine have once again to learn that progress depends, not only upon our own efforts in the discharge of our daily task of healing, but upon an association as intimate as can possibly be with every aspect of biology.

THE ANTISEPTIC THEORY AND ITS CONSEQUENCES TO SURGERY.

The consequences of Lister's work are many and far reaching. The immediate result was, of course, the complete abolition of many of the dangers attaching to the most certain and most dreaded peril of all—infection in the wound extending to other parts, causing severe and protracted suffering, even grave risk to life itself. But when the few operations then practised became safe, it was obvious that other operations might be attempted. The result was that procedures condemned as "murderous," the practice of which should, in the opinion of high authority, lay a man open to a charge of manslaughter, were greatly increased in number as soon as it could truthfully be claimed that the risk of operation was definitely less than the risk of inaction. The most exemplary instances were found in the practice of abdominal surgery. Ovariotomy, condemned by highest authority as homicidal (the governors of King's College Hospital in 1877 had forbidden the staff to undertake it), became so safe in expert hands that neither patients nor surgeon hesitated in the choice of operation.

In all new advances in surgery it is only the patient whose disease has reached a high development threatening disability, suffering, or death who is submitted to operation; the cases with the greatest risk already attached to them are the first to undergo adventurous treatment. As the safety of surgery is shown in these, similar cases are treated, but in an earlier stage—a stage in which the surgical risks are less, the convalescence quicker, the mortality lower. Ultimately a fatality occurs only in the exceptional case, from causes connected rather with the original disease than with the operation practised. In my days as a resident in hospital ovariotomy was regarded as an operation of utmost gravity, and was performed with much ceremony in private wards and with special nurses. McGill, who led me by the hand along the path of surgery, always had a Turkish bath in the afternoon of the preceding day, and operated at an unusually early hour in the morning. Some mammoth tumours were removed—tumours which at times greatly outweighed what was left of the patient; indeed, we removed patient from tumour rather than tumour from patient. From ovariotomy an advance was made to the treatment of other pelvic conditions. Fibroid tumours of the uterus were eventrated and a constricting band of metal applied to the cervical stump, which was brought up into the wound. When for the first time I returned the pedicle to the abdomen after the operation of hysterectomy, our obstetric physician, Dr. Braithwaite, quailed with horror at such temerity. The conquest of other disease of the abdomen was soon inaugurated; the campaign owed almost everything to those who had practised what we now call gynaecology. Spencer Wells removed the enlarged spleen from a patient whose tumour he had believed to be uterine; and a condition of tuberculous ascites, miscalled "ovarian cyst," improved so much after the release of the fluid that similar cases were quickly claimed for surgical treatment.

The whole abdomen soon became the province of the surgeon, whose activities also rapidly extended to the cranial and thoracic cavities, so that at the present day neither technical difficulty nor any danger in the trauma inflicted prevents the surgeon from dealing with almost any lesion, wherever it may lie, or whatever its nature. There is scarcely any organ which cannot be attacked; there is no inherent and inescapable risk in any technical procedures.

An extension of safe operative measures within the cavities, especially within the abdomen, has resulted in a complete revision of our knowledge of the earlier structural changes in many organs attacked by disease, and of the clinical manifestations which those changes produce. Surgery has proved an implement of research; it is indeed the most powerful of all, though this fact is not yet fully realized, nor is adequate use yet made of it. In the mortuary period of pathological knowledge only the most advanced stages of disease, those stages which at last proved fatal, could as a rule be examined. The final symptoms of the terminal changes in structure were, not perhaps the only, but they were certainly the chief interest of the clinician; little was known of the dependence of earlier symptoms upon tissue changes. Pathologists and physicians alike were incredulous as to the truth or significance of much of the new knowledge which the surgeon was daily accumulating as the result of his widening observations. Even to-day the physiologist and physician do not appreciate how much is to be learnt at the bedside or in the operation theatre.

As an implement of research, surgery has been generously used by the physiologist in his experiments upon animals. Perhaps the most entrancing exploit of all was that inaugurated in this country by Ferrier and pursued by Macewen, Horsley, Sherrington, and others, by which the functions of the various parts of the nervous system have been elucidated. There is something of enthralling interest in the story of the localization of function in the cerebral cortex, in the realization that in the convolutions of the brain exist allotments each with its own highly specialized and exclusive function. The work of the surgeon upon the abdominal viscera, his discoveries concerning, not only changes of structure in various diseases, but also disorders of visceral reflexes, and symptoms associated with these, have been not less arduous, nor less interesting, and even more fruitful in the clinical study of diseases, and in the relief of human suffering.

The capacity of the surgeon to enlarge the area of his operations has been used with gratifying success in the treatment of accessible cancer. The lines of extension of this disease have been the subject of inquiry by pathological anatomists, who have studied afresh, not only the lymphatic systems of the various organs affected, but also the exact lines along which the cancer cells may drift or grow. The work of Sampson Handley on the breast, and of Ernest Miles on the rectum, are worthy of special commendation. Since we know beyond dispute that cancer is primarily a local disease, we know also that every accessible cancer is curable if operation is practised in the early stages of disease. That is not the least of the debts we owe to Lister. It is his work that has permitted us so to plan our operations that not the growth alone but also all those parts, such as lymphatic glands into which the growth makes haste to extend, can all be removed in one mass, and that infection is now the least of our anxieties.

THE FUTURE.

We may almost claim that the full effect of Lister's work is now accomplished. We know that for all time operations of every kind may be practised without the grave risks that formerly were prohibitive. The art of surgery is far in advance of all the sciences upon which its future progress depends. Until they stand abreast, or even advance ahead, the progress of surgery will be slow. The great search for us all must now be for the methods of applying new discoveries in other sciences, physiology, biochemistry, pathology, physics, and the like, to the study of disease.

Many lines close in the dial's centre. From all the vast periphery of our surgical world messages of gratitude and of homage converge upon Lister to-day. Lister made possible the new surgery, beyond all question the most beneficent art mankind has ever practised. So long as there are men to live and suffer, so long will Lister be there to heal them, to hold the gates of life ajar.

To the honoured dead we raise our monuments, some cast in bronze, some graven in stone; some, like that of immortal Hunter, begun in a man's lifetime, the work of his own hands, are enlarged and lovingly enriched through generation after generation by those who labour in the master's cause. On the roll of honour which in letters of gold bears the names of the saviours of mankind, no man is more worthy of remembrance than Lister. His living and enduring memorial is a great, and ever greater multitude of men, women, children, of every nation, of every race, of every creed, through his mercy and by the skill of his most gentle hand relieved from infirmity and suffering and sorrow, and made for a time triumphant over death itself.

It is immortal Lister we salute to-day, the supreme benefactor of mankind.

THE LISTER FRIEZE IN FAÇADE OF POLICLINICO UMBERTO, ROME.

LISTER:

A HOUSE-SURGEON'S MEMORIES.*

BY

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"During the siege of Paris (1870-71) Nélaton, in despair at the sight of the death of almost every patient after operation, declared that he who should conquer purulent infection would deserve a statue made of gold."—LIFE OF PASTEUR.

ON April 5th, 1827—one hundred years ago to-morrow—Joseph Lister was born, the man who conquered surgical purulent infection for all humanity and for all time. There is an indifferent and somewhat neglected bust of him in Portland Place, but the statue of gold has not yet been erected, although wound infection was conquered in Lister's own lifetime.

Lister achieved more for mankind than all the surgeons from the beginning of history. Before his coming the results of surgical wounds were hardly better than in the Dark Ages, and yet he lived to see his work and teaching result in the saving of more lives than all the military heroes of all the ages had destroyed.

Fifty years ago, this year, he left Edinburgh for London. He was then 50 years of age. On the same day that he entered King's College Hospital as one of its surgeons I entered it as a student—half a century ago.

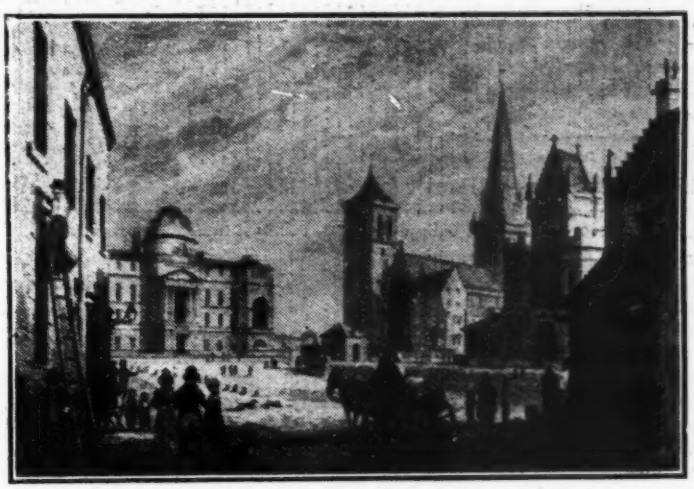

FIG. 1.—View of Glasgow Royal Infirmary from Kirk Street.

Lister was of pure English stock; his people came from Yorkshire. His father was a prosperous wine merchant in the City of London, and from him he inherited other things beside a competence. Amongst them was a taste for scientific pursuits: the wine merchant was deeply interested in the science of optics; he helped to perfect the microscope, and was a Fellow of the Royal Society. After attending private schools in Hitchin and Tottenham, Lister entered University College, London, in 1844, at the age of 17. In University College Hospital he was present at the first operation performed in this country under ether, by Liston on December 21st, 1846.

As chill penury did not repress his anxiety to see and know the best in the surgical world, he journeyed, in 1853, at the age of 26, to Edinburgh to study under Syme. This great surgeon—to whose memory and teaching Lister always remained devotedly attached—was the man of whom it was said that he never wasted a word, a drop of ink, or a drop of blood. Lister became his assistant, and, a few years later, his son-in-law.

From Edinburgh Lister, at the early age of 33, was called to fill the Chair of Surgery in the University of Glasgow (1861). There he remained until 1869, and it was chiefly during these years that he laid the foundation of antiseptic surgery.[1] In 1869, at the age of 42, he returned to Edinburgh as Professor of Surgery in the University, and there he passed the eight years of his life which he afterwards referred to as the happiest, as they certainly were the fullest and most flowing.

In 1877, exactly fifty years ago, Lister was invited to leave Edinburgh for London. Why did he come south? It was certainly not to hunt for honours and distinctions; his Quaker character thought little of such adornments. It was not due to any mercenary attraction. He was the possessor of a sufficient private fortune, and the commercial side of our profession had no attraction for him. All who knew him are convinced that he accepted the invitation to London simply because he felt that on the larger stage of the metropolis he could so demonstrate his work that he would the sooner fulfil his mission. As his biographer records, "the antiseptic doctrine had been accepted in every part of the world that counted, except London, where alone it made but little way." In taking leave of his class in Edinburgh he announced that it was only a sense of duty which impelled him to leave a school where he had received great kindness, and to take a cold plunge into what he said "might prove to be a sea of troubles."

He was indeed right; a cold and stormy sea of trouble was awaiting him in London—fifty years ago. Lister returned from his professorships in two Scottish universities to his own southern people, and to the city of his birth. Many peoples, in all times, have been addicted to stoning their prophets. England and London half a century ago were not backward in demonstrating that a prophet was not without honour except in his own country.

His first function was the introductory address of the session on Monday, October 1st, 1877. Lister, to most people's astonishment, opened his address by stating that he was going to record some experiments he had made "to obtain some positive and definite knowledge of the essential nature of a class of phenomena which interest alike the physician, the surgeon, and the accoucheur—namely, the changes in organic substance which are designated by the general term fermentation."[2] It was looked on as a bad start, and

* Read before the Royal Society of Medicine, April 4th, 1927.

altogether unsuitable, for it was generally agreed that such an abstract subject as lactic acid fermentation was no concern of a surgeon. But it was at the hospital that Lister encountered his full sea of troubles. He had stipulated that he should be allowed to bring with him from Edinburgh four assistants already trained in his methods and attached solely to his service. Of the four who accompanied Lister from Edinburgh to London one, Dr. James Altham of Penrith, is dead. Of the surviving three, one is Dr. W. H. Dobie, who has long held a high position in Chester. One is Dr. John Stewart of Halifax in Nova Scotia. He is one of the most affectionate pupils of the master, whom he has drawn in many letters and pen pictures. The fourth had been Lister's last house-surgeon in Edinburgh, and was his first in London. He is known to us all as Sir William Watson Cheyne, who succeeded his master as professor in King's College Hospital, became President of the Royal College of Surgeons of England, served his country on land in the Boer war and at sea in the great war, reached the rank of rear-admiral, sat in the House of Commons as member of Parliament, and is Lord Lieutenant of Orkney and Shetland.

The peace-loving Quaker spirit of Lister was also much distressed by the opposition he met with at the hospital from the nursing sisters of St. John. In the days of Sir William Fergusson the teaching was entirely in the wards; he passed from bed to bed, followed by a sister with a towel and basin of water, in which he dipped his hands after examining a patient. Lister upset the pious sisters by copious ablutions and by purification of many pairs of hands before a patient was touched, and many of his cases were carried or wheeled into the theatre as subjects for clinical lectures. These sisters of St. John were opposed to Lister and all his ways, and dealt him those pious and smiling stabs in which women, particularly good women, are so skilful. Lister only showed how he felt them by the little gasping sigh we all learned to know and to respect as his only sign of sorrow or annoyance.

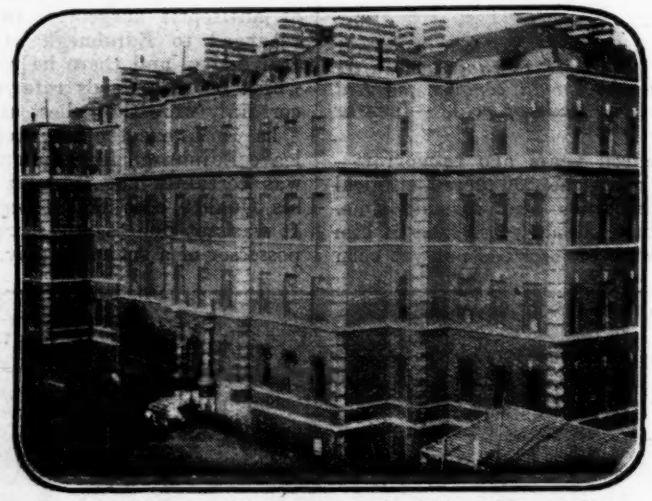

FIG. 2.—Old King's College Hospital, Portugal Street, Lincoln's Inn, London.

Worse than these two gales in his sea of trouble was what John Stewart describes as the "colossal apathy," the "monstrous inertia to the force of new ideas," the inconceivable indifference shown by the students and surgeons of London. Fifty years ago the wards of most of the hospitals in England reeked with the smell of putrefaction—just as they had done for centuries. But Lister's wards were free from what was everywhere accepted as the recognized "hospital smell"; his dressings, when taken off, were free from pus and fetor; they were handed round for confirmation, and I well remember the surprised and approving sniff with which the visitor—generally a foreigner—confirmed Lister's frequent and pleased remark: "You will notice, gentlemen, that any discharge is only serous and is quite sweet." Yet Londoners did not come to see his epoch-making change, to hear, to smell, and to be converted.

In Edinburgh Lister's class frequently numbered 400 students; in London some ten or twenty might turn up, but these gradually fell off. Ten years after his arrival Lister referred to his small classes at King's, after his crowded audiences at Edinburgh, as "a humiliating experience."

To-day, after fifty years, with new conditions and changed mentalities, it is perhaps superfluous, as well as somewhat difficult, to explain this neglect. I think the faulty method of teaching and examination had much to do with it. Lister's teaching did not help a man very much to pass an examination and secure a diploma. He was therefore neglected by the average student, while he cast a lifelong spell over those who, as dresser or house-surgeon, came under the potent power of his personality.

It is more difficult to suggest the reasons why London surgeons neglected or belittled his work. One was that Lister had, by way of experiment, to try many things in his application of Pasteur's principles to wound dressing. In these efforts he moved from carbolic lotion to boracic, or made trials of corrosive sublimate, and then reverted to carbolic. These frequent changes were all causes for stumbling to the average individual who had not grasped the first principles, and was therefore doubtful of a so-called "system" which was not definite or final. (Later in history these frequent modifications were counted to Lister for righteousness, for they demonstrated that it was the principle which mattered and not the method of technique.) Another reason was that the surgeons of the later Victorian period—just like Astley Cooper, Abernethy, and John Hunter—were without Lister's scientific training and Pasteurian knowledge, and looked upon his methods as but another variant of many previous empiric efforts. Lister himself realized this, for in one of his addresses he said: "I venture to assert that no one who has not a belief in the germ theory of putrefaction can ever perform satisfactorily the antiseptic treatment of wounds." How far the London surgeons were from being able to appreciate this is shown by an annotation in the *Lancet* in 1877 (vol. i, p. 361), which said:

> "In many quarters Mr. Lister has acquired the reputation of a thoughtful, painstaking surgeon, and has done some service to practical surgery by insisting on the importance of cleanliness in the treatment of wounds, although this has been done by the glorification of an idea which is neither original nor universally accepted."

Still, making all allowances, it is difficult to explain why London was the last place to accept the new evangel. The BRITISH MEDICAL JOURNAL, which had always supported Lister, wrote "of that great principle in surgery which had been accepted everywhere else almost before it was even listened to in London."[3]

But if students and London surgeons were apathetic over the revolution in surgery being wrought in their very midst, it was not so abroad. Already in 1875, two years before coming to London, Lister, during a prolonged tour in Germany, was received everywhere with enthusiasm. In the words of the *Lancet* (June 19th, 1875), "the progress of Professor Lister has assumed the character of a triumphal march." In 1879 Lister's appearance at the International Congress of Medicine at Amsterdam was, the BRITISH MEDICAL JOURNAL reported, greeted with "an enthusiasm which knew no bounds."[4]

At the next International Congress, in London in 1881, foreign surgeons must have marvelled among themselves when they heard British surgeons still attempting to cast doubts on the principle on which Lister founded his methods, or belittling his results. But let us, in parenthesis, project our attention forward to the following International Congress in London. It was in 1913. Lister had died the previous year, but the light of his good work was shining before all men. As is well known, congresses and such-like events are often commemorated by the issue of a medal. The medal of 1881, when Lister's work was slighted and belittled by his own countrymen, bore the features of Queen Victoria. But in 1913 it was felt in Britain that the one effigy worthy of being stamped on the medal of an International Congress in London was the head of Joseph Lister.

My audience will hardly believe me when I tell them that in my student days the surgeon of one of the largest teaching hospitals—a Fellow of the Royal Society, and a President of the Royal College of Surgeons—frequently

raised an appreciative laugh by telling anyone who came into his operating theatre to shut the door quickly, in case one of Mr. Lister's microbes should come in!

The first case in which Lister wired a fractured patella was in 1877. When I was his house-surgeon I had the honour of bringing together and exhibiting the first six of his seven first cases which he showed before the Medical Society of London on October 29th, 1883.[5] I well remember the astonishment with which Fellows of the society tried to feel the buried silver wire. Others were aghast at the unwarrantable danger incurred in opening a healthy knee-joint. One hospital surgeon, Morrant Baker, asked, "Had not ankylosis, amputation, and death been heard of after its performance?" One surgeon said that if the next case died Lister should be prosecuted for malpraxis; and another exclaimed, "C'est magnifique, mais ce n'est pas la chirurgie."

Although Lister was carrying out operations never before attempted in the history of surgery, it is interesting to record that I never saw him do an abdominal section. During my term of office we never heard the word "appendicitis"; gastric ulcers were diagnosed but never treated surgically; ovarian cysts were tapped and tapped until the patient died; that a calculus could be removed from a ureter or a bile duct never entered the imagination of anyone.

In 1897, the year of Queen Victoria's Diamond Jubilee, Lister was made a peer, his peerage having been the first ever conferred upon a surgeon. In the following May an address and dinner were offered to him by thirty old house-surgeons and one hundred dressers.

FIG. 3.—Pasteur's Jubilee, 1892. Lister greeting Pasteur at the Sorbonne.

In 1892 Pasteur's jubilee was celebrated. Lister was the predominant personality amongst all who came to honour the great French scientist. This event is recorded in a most striking picture (Fig. 3), which not only suggests the one-sided feebleness of the hemiparetic Pasteur, leaning on the arm of Carnot (the President of the Republic), but, in a marvellous manner, the artist, Rixens, gives a most lifelike representation of Lister's features, his figure, and even of his hands, gestures, and gait.

Lister had retired from the active staff of King's College Hospital in 1893 at the age of 66. He was President of the Royal Society from 1895 to 1900. In 1903, for the first time, his stalwart frame was shaken by a threatening of the infirmities of age. His last years were saddened by slowly failing health, and on February 10th, 1912, in his eighty-fifth year, he died peacefully at the little fishing village of Walmer, looking out on the English Channel.

What was the personality of this master of surgery? He was tall, upright, well knit, stoutly built, deep chested; his bearing was dignified, and his manner restrained, courteous, and considerate. His voice was low and musical, but a trifling hesitation in his speech had persisted from childhood. It was very transitory and never embarrassing. Some thought that the extra effort and emphasis required in overcoming this occasional stammer added a little charm to his speech, but he himself was very conscious of it, and referred to it as "a severe thorn in the flesh."

His manner had a certain aloofness about it. His lifelong disciple, Watson Cheyne, confesses that Lister always inspired him with a certain sense of awe. I myself felt that his soul was "like a star and dwelt apart." I can only say that no teacher, no friend, no man I have ever known has left his impress on me as Lister has done. To none of them do I feel the debt I owe to him, for the example of his veracity of thought and word, his patience and constancy in the pursuit of truth, his eagerness to instruct his pupils, his long-suffering with stupidity, his tenderness to the poor, and his gentleness to the sick and maimed.

He was imbued, I need hardly say, with a truly scientific spirit. His studies in physiology and pathology, and their bearing on clinical surgery, will be referred to in addresses by experts during this centennial week. He urged the necessity of experimental and laboratory research. In 1875 Queen Victoria, to whom only one side of the question had been presented, wrote requesting him to take action for the suppression of vivisection. Although he held a court appointment he had the courage to decline an invitation he could not conscientiously accept. He wrote to her private secretary as follows: "I should deeply regret that I cannot see my way to comply with this request, were I not persuaded that my doing so would not promote the real good of the community, which I know to be Her Majesty's only object in the matter."

In the same way, although he used the cases in his service very freely for class demonstration, his patients never resented it—were even proud of it. One of his sayings was, "The individual patient asks to be relieved and not to be studied." This reminds us of the great saying of a Frenchman, "L'amour de la médecine fait le savant, l'amour du malade fait le médecin."

He felt checks and disasters very keenly, but a certain buoyancy soon restored his equanimity and forward-looking temperament. He himself writes thus when on a holiday: "I have the happy faculty of being able to throw off all thoughts of work for the time being." He fished, but, as his biographer remarks, he was a diligent amateur but never an expert. He skated, and could do 8's and 3's—but of small dimensions! He took a fair share of vacation, and on his holidays could be light-hearted and boyish. But complete idleness was not congenial to him; on his holidays there were usually proofs to correct, or addresses to prepare. On the Continent he practised and improved his very good French and German, and in both of these languages I have often heard him speak fluently, easily, and without preparation. He was devoted to walking and excursions. He was interested in botany and bird life; and he could always fall back on a pocket edition of Horace, Dante, or Goethe.

Lister's hand was large and neither graceful nor delicate-looking. He was a steady, firm, and deliberate operator.

It is interesting to visit the surgical block of the great hospital in Rome, the Policlinico Umberto I. The bas-relief in the tympanum over the main entrance shows Lister operating, and wearing a white gown. Now, Lister never wore a white gown, nor a mask, nor gloves. He frequently never removed his coat, but simply rolled his sleeves back, and turned his coat collar up, so that his white starched collar would not be made sodden by the cloud of carbolic spray in which we operated. Sometimes he removed his black frock-coat, and an ordinary towel was pinned across his chest. I myself, for operations, put on an old blue frock-coat which I had worn for years previously in the dissecting room. It was stiff and glazed with dry blood. Yet our cases, as I remember them, healed as rapidly and as smoothly as they do with all the ceremonial and ritual of sterilization and asepsis nowadays.

Lister, this genius, created anew the ancient art of healing. He did more for surgery and mankind in

his lifetime than all the surgeons of all the ages had effected since the days of Hippocrates. I venture to say that, as an instrument in God's hands, Lister has wrought more for the relief of bodily suffering, for the security of life, for the prevention of anxiety, for the conversion of sorrow into joy, for the promotion of happiness, and for the enrichment of the life of mankind than any one man who has ever trod this earth. The history of our world is divided into the two periods, before and since the coming of Christ—B.C. and A.D. The history of medicine and surgery, and of human bodily suffering, will always be divided into the times before and after Lister. He was our countryman, and the greatest of the masters of surgery; we have lived through the golden age when he evolved this miracle of healing which had waited for centuries for his coming, and now can be wrought by every surgeon in every country in the world. Any house-surgeon, any newly qualified doctor, can to-day remove pain, arrest disease, and save life by perfectly safe operations which no man knew of, or, knowing, dare not adventure when Lister came to London fifty years ago.

Those who chanced to come near this great master caught glimpses of such a spirit as is seldom revealed to us. We are fortunate in possessing a perfect portrait of him in an imperishable poem, written by W. E. Henley, who at one time was his patient in the Edinburgh Infirmary:

> "His brow spreads large and placid, and his eye
> Is deep and bright, with steady looks that still
> Soft hues of tranquil thought his face fulfil—
> His face at once benign and proud and shy.
> If envy scout, if ignorance deny
> His faultless patience, his unyielding will,
> Beautiful gentleness and splendid skill,
> Innumerable gratitudes reply.
> His wise, rare smile is sweet with certainties,
> And seems in all his patients to compel
> Such love and faith as failure cannot quell."

Lister was born a Quaker, but he lived most of his life and died a member of the Church of England. He was blessed with a loving and devoted wife, who appeared to have no thought or interest beyond her husband. They were inseparable companions in all his work and in the numerous Continental trips he loved to make. It was while on one of these, in Italy, that his wife died, after a brief illness, in 1893. They had no children, and after his wife's illness Lister was a lonely man. He lies buried beside her in West Hampstead Cemetery.

As illustration of his noble spirit I will give a few sentences from two of his addresses. As a young professor of 33 he told the Glasgow students in his inaugural lecture in 1860 that the two great requisites for the medical profession were—"first, a warm loving heart; and secondly, truth in an earnest spirit." Eighteen years later, in a graduation address to newly qualified students, he said: "If we had nothing but pecuniary rewards and worldly honours to look to, our profession would not be one to be desired. But in its practice you will find it to be attended with peculiar privileges, second to none in intense interest and pure pleasure. It is our proud office to tend the fleshly tabernacle of the immortal spirit, and our path, if rightly followed, will be guided by unfettered truth and love unfeigned. In the pursuit of this noble and holy calling I wish you all God-speed."

In the north transept of Westminster Abbey there is a marble medallion of Lister's bust, placed near to those of the great scientists Darwin, Stokes, Anderson, and Watt. At the public funeral service in the Abbey on February 16th, 1912, there was sung an anthem of Handel's to words so peculiarly applicable to our dear master that I cannot better conclude than by quoting them:

"When the ear heard him, then it blessed him, and when the eye saw him, it gave witness of him; he delivered the poor that cried, the fatherless, and him that had none to help him. Kindness, meekness, and comfort were on his tongue. If there was any virtue and if there was any praise, he thought on those things. His body is buried in peace, but his name liveth for evermore."

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[1] *Lancet*, 1867, i, 326. [2] BRITISH MEDICAL JOURNAL, October 6th, 1877, p. 465. [3] Ibid., December 13th, 1879, p. 943. [4] Ibid., September 20th, 1879, p. 453. [5] *Proc. Med. Soc. London*, 1884, vol. vii. p. 8.

A CASE OF EXCISION OF KNEE AND ELBOW JOINTS BY LORD LISTER:

CONDITION FORTY YEARS AFTER.

BY

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(*With Special Plate.*)

IN view of the approaching Lister Centenary, I thought that the following case would be of interest. It is that of Arthur Howard, aged 67 (?), cattle driver, who was admitted under my care to the Glasgow Royal Cancer Hospital on April 3rd, 1925, suffering from an inoperable malignant growth of the right orbit. The case was apparently not suitable for radiation treatment either by deep therapy or by radium. The history of the growth Howard gave was that nine years previously he had an ulcer on his right upper eyelid which was excised, but recurred some months later. Three years before admission he had an application of carbon dioxide snow, when being treated in a Glasgow hospital, and he also attended the Glasgow Royal Infirmary once weekly for seventeen months for electrical treatment. The growth, however, continued to enlarge, and he was sent to the Glasgow Royal Cancer Hospital. It is unnecessary to give a description of the case on admission, beyond saying that the mass completely overlaid the right eye, which was entirely hidden, and extended over the bridge of the nose. The tumour bled easily; but there was no glandular involvement. On questioning Howard as to past illnesses, he stated that forty years before (1884) he had had his left knee-joint excised in King's College Hospital by Lord Lister for tuberculosis, as also his left elbow-joint. In addition, the middle fingers of both hands were removed at the metacarpo-phalangeal joints. The knee-joint was excised about three months after the elbow-joint, and the right middle finger was removed at the same time. The left middle finger was amputated when the elbow was excised. (Fig. 1.)

On examination, the left knee-joint was found to be completely ankylosed, there being about two inches of shortening of the left leg. (Fig. 2.) The excision was apparently performed through a semilunar incision. The left leg is in a position of complete extension, and gives the patient perfect support. The patient had good free movement of the left excised elbow-joint. There was a certain degree of lateral and antero-posterior instability, but in spite of this the joint could be actively extended and flexed. (Fig. 3.) The patient could also pronate and supinate the forearm, these latter movements being best performed when the joint was slightly flexed. There were evidently several osteophytic outgrowths present in the neighbourhood of the new joint. The left and right middle fingers had been disarticulated at the metacarpo-phalangeal joints. The affected arm was nearly three inches shorter than the right one.

Skiagrams were taken of the elbow and the knee. Those of the elbow-joint (Figs. 4 and 5) show that the lower extremity of the humerus and the head of the radius have been removed, but the olecranon process of the ulna appears to be intact. The upper extremities of the forearm bones articulate with the anterior of the humerus about one inch above its lower end, the latter thus projecting beyond the joint. The skiagram (Fig. 6) of the left knee-joint shows that the patella, lower end of femur, and upper end of tibia have been removed, and the femur and tibia united by wiring. The line of union between the femur and tibia can be recognized, except over an area of about one inch. On the inner aspect of the upper extremity of the tibia the skiagram reveals a dense opacity, showing no definite structure. This dense shadow is almost completely surrounded by an area of bone, which exhibits marked rarefaction. This shadow probably represents a sequestrum. The skiagram also shows the wire suture in position.

This case has an historic interest, showing us after a lapse of many years the work of Lister as a surgeon; but it has a further interest in revealing the presence of the wire

SIR G. T. BEATSON: EXCISION OF KNEE AND ELBOW JOINTS BY LORD LISTER.

FIG. 1.—Amputation of middle fingers for tuberculosis, by Lord Lister in 1884 at King's College Hospital.

FIGS. 4 AND 5.—Skiagrams (taken in 1925) of the left elbow-joint, showing that the lower extremity of the humerus and the head of the radius have been removed.

FIG. 2.—Excision of left knee-joint for tuberculosis, by Lord Lister in 1884 at King's College Hospital.

FIG. 3.—Showing left elbow after excision by Lord Lister forty years previously.

FIG. 6.—Skiagram (1925) of left knee-joint, showing that the patella, lower end of femur, and upper end of tibia have been removed, and the femur and tibia united by wiring.

FIG. 3.—Radiogram of same patient seven months after grafting. Note that the grafts give the densest shadows in the foot.

FIG. 4.—Lateral radiogram showing the hinge in the graft at the level of the joint between the os calcis and the astragalus.

FIG. 7.—Antero-posterior radiogram of same patient as Fig. 6. The lowest half arrow-head marks the hinge on the fibular side.

[Figs. 1, 2, 5, and 6 are reproduced in the text.]

R. W. POWER: FRACTURE-DISLOCATION OF THE ANKLE-JOINT.

FIG. 1.—Antero-posterior view of injury, showing displacement of the medial malleolus and fracture of the fibula.

FIG. 2.—Lateral view, showing an anterior dislocation and forward displacement of the medial malleolus.

FIG. 3.—Antero-posterior view the day after the fracture-dislocation had been fixed in a three-piece sectional plaster casing; the alignment was considered satisfactory.

FIG. 4.—Lateral view (taken at the same time as Fig. 3), showing the anterior dislocation and forward displacement of the medial malleolus corrected.

FIG. 5.—Taken eight weeks after injury. Shows the position to be similar to that in Fig. 3.

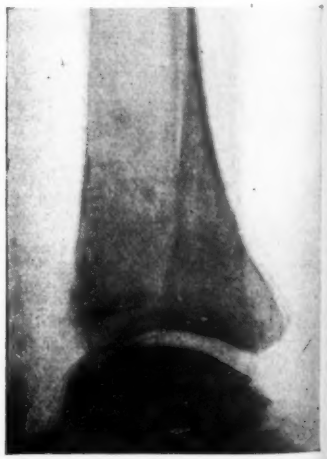

FIG. 6.—Taken at the same time as Fig. 5. Shows the position to be similar to that in Fig. 4.

suture. When I was house-surgeon with Lord Lister in 1873 he had then begun to extend the scope of his operations, having full confidence in his antiseptic system. The two great objects Lister had in view when he came to Edinburgh in 1869 were, first, the importance of perfecting his technique in the matter of dressings so as to make them reliable for excluding the micro-organisms from the wound during its healing; secondly, he was desirous to increase the scope of his operations so as to furnish further evidence of the reliability of his antiseptic system of surgery. The cases he selected to extend his operative measures were the remedying of bone deformities and the wiring of ununited and badly united fractures. At that time he used silver wire, but was unwilling to leave the wire *in situ* after union had taken place, and it was nearly always removed, as, apparently, he regarded it as a foreign body that might be an irritant and the cause of future trouble. The case reported to-day shows that he had evidently departed from that view, and had had no hesitation in leaving the wire *in situ*. It is interesting to note that he had left intact the olecranon process of the ulna, and I learn from Dr. Stewart of Halifax, N.S., who was then working with him in London, that when that process of bone was not diseased Lister was in the habit of leaving it. It is interesting, too, to note that the articulation of the upper extremity of the forearm bones with the anterior of the humerus about one inch above its lower end allowed the projection of the latter considerably beyond the joint, there being no surface of bone against which it worked, and which would have ensured its attrition.

A HINGED GRAFT FOR UNSTABLE FEET.*

BY

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(*With Special Plate.*)

In February, 1926, Rutherford Morison and W. Mackenzie published a method of treating cases of paralytic foot-drop in children.[1] In children, as in animals, it is notoriously difficult to secure ankylosis by operating on unstable joints without injuring the growing ends of bone. Morison and Mackenzie solved the problem for the ankle by taking osteo-periosteal strips from the tibia and implanting them into beds cut in the bones of the leg and tarsus. The grafts became "osseous ligaments" which completely fixed the joint.

This method of osteo-periosteal grafting is capable of wide application, and takes rank, I believe, with the notable contributions to orthopaedic surgery of the past twenty years. But while these grafts give the best available way of procuring absolute fixation in children with foot-drop, there are many unstable feet in which some movement may with advantage be preserved. Apart from those limbs in which enough contractile force remains to permit of tendon transplantation, there are others with muscles either unsuitably placed or too weak to be used with effect.

Talipes Calcaneo-Valgus.

The deformity of talipes calcaneo-valgus is a case in point, and many imperfect remedies have been proposed for its correction. Transplantation of the peronei is inadequate whether (*a*) their tendons are fixed directly to the inner border of the foot, or (*b*) are used to replace the long extensors of the toes, while these in turn are shifted to a medial insertion.

Tendon fixation is often followed by stretching, and astragalectomy—in young children at least—frequently results in an inward rotation of the front of the foot. At best, too, astragalectomy gives a squat, unshapely ankle. The need, then, in this deformity is for the strongest possible support compatible with useful movement, and this may be obtained by fixing the unstable articulation in bony splints provided with a false joint or hinge.

The Hinged Graft.

My first experience with osteo-periosteal grafting showed me that the method held an unexpected resource. Morison and Mackenzie, intent upon absolute immobility, fixed their cases of "dangle foot" firmly in plaster immediately after operation; the first dressing was done a month later, and the foot was at once put back into plaster for a further six weeks.

In my patient, whose peroneal nerve had been divided at another hospital in the treatment of a tuberculous fibula, there was a healing tuberculous ulcer on the dorsum of the foot which made enclosure in plaster undesirable. After grafting, therefore, his leg was put on a back-splint with the footpiece set at a right angle. In spite of the unpromising skin condition the wound healed by first intention, but bandages, of course, could not give the rigid fixation of plaster-of-Paris. Small movements must have occurred, for after thirty-eight days a few degrees of mobility were present in the ankle. Radiograms showed that the grafts had fused respectively with the bones of the leg and tarsus, but where they crossed the ankle there was in each a small hinge. An opportunity soon occurred for utilizing this chance discovery.

A child, aged 7, who had had untreated infantile palsy for three years, was brought to me with a very marked calcaneo-valgus deformity. The right foot could be dorsiflexed till the instep touched the leg; the outward displacement, too, was extreme. Postural treatment in over-correction did not diminish the deformity, and I determined to try the effect of osteo-periosteal grafts. I employed the following procedure.

FIG. 1.—Girl, aged 7, three months after treatment of extreme calcaneo-valgus deformity of the right foot by hinged grafts.

FIG. 2.—Same patient as Fig. 1, seven months after grafting, standing on grafted foot.

After the usual "double" preparation of the skin on two nights preceding operation, an incision was made which curved on to the tarsus behind each malleolus. The knife used for incising the skin was discarded and the skin edges were excluded from the wound by side curtains. (I find in orthopaedic operations which require neighbouring incisions that side curtains are best fixed to the lips of the wound by Michel clips, which occupy less space than towel forceps.)

On the medial side the tendons of the tibialis posterior and the flexor longus digitorum were dislodged from behind the malleolus and raised from the tarsus. On the lateral side the peronei were similarly dealt with. Grooves were then gouged in the beds of these tendons. An incision over the tibia (Fig. 1) allowed two grafts to be outlined with a knife on its subcutaneous surface; these were cut with a chisel from the tibia in the form of pliable strips of periosteum encrusted with bone, and were laid with their bony face on the gouged grooves. The displaced tendons were sutured back into position over the grafts and thus held them in place. Neither the grafts nor any part of the wounds were touched except with instruments. Unchromicised (and untouched) catgut was used for suturing, and the knots were tied with forceps. The skin was closed with Michel clips only, exact coaptation being secured by the transverse needle scratches which preceded the incisions.

* A paper read before the Egyptian Branch of the British Medical Association, January, 1927.

After-Treatment.

The limb was bandaged to a long back-splint, with the foot at a right angle to the leg, for one month. At the end of this time there was, as in my first case, a small degree of movement at the ankle-joint. The foot and leg were put into plaster for another month, and the child was allowed to stand on the plaster casing.

Three months after operation radiograms showed the grafts as well defined bony structures on either side of the ankle, with a distinct hinge at the level of the joint. The gait at this time was greatly improved though still rather clumsy.

Six months after operation the child returned for examination, when the photographs and radiograms shown in Figs. 1 to 4 were taken. She could then stand firmly and without deviation on the grafted foot while the other was raised (Fig. 2). Dorsiflexion of the ankle was present to the extent of 35 degrees, and there were 13 degrees of plantar flexion. The gait would have been normal but for a slight rotation inward of the untreated left leg.

FIG. 5.—Girl, aged 15, before operation, with left calcaneo-valgus deformity and right pes equino-varus (both paralytic).

FIG. 6.—Same patient as Fig. 5, nine weeks after hinge-grafting to correct the calcaneo-valgus of the left foot. (The equino-varus deformity of the right foot was treated by tendon transplantation seven weeks previous to the photograph by the method described by Dr. Handousa. (See p. 666.)

I have since repeated this procedure in a girl of 15 with a paralytic calcaneo-valgus deformity in the left foot.

The right foot was fixed by contracture in the exactly opposite position—that is, in equino-varus (Fig. 5).

I first operated on the calcaneo-valgus deformity, using two osteo-periosteal grafts in the way I have described. I then over-corrected the opposite deformity in the right foot by manipulation and afterwards transplanted the tibialis anterior and extensor hallucis longus to the outer side of the foot, using a technique for joining and fixing the tendons recently suggested by Dr. Ahmed Handousa, surgical registrar at Kasr el Aini, in the Surgical Unit, whose method is described, with figures, at page 666.

I mention the second intervention because of necessity it prevented weight-bearing on the grafted foot, and so caused such rarefaction of the grafts that at the risk of disturbing the transplanted tendons I made the patient stand for short periods on the plaster casing. After three weeks recalcification of the grafts was well marked, and her left foot was stabilized with a range of about 20 degrees of vertical movement at the ankle.

The strengthening of these grafts with use, shown in the figures of Morison and Mackenzie, who have observed some of their cases for five years, is in contrast to the weakening and stretching which are the end of so many alluring orthopaedic methods.

The hinged osteo-periosteal graft thus has the following advantages in the treatment of talipes calcaneo-valgus:

1. It promises a stability which depends upon function.
2. It requires a much shorter and less complex after-treatment than do tenoplastic methods.
3. It allows useful movements to persist.
4. It does not disfigure the ankle (see Figs. 1, 2, and 6).

Apart from their own peculiar value in calcaneo-valgus deformity, I would suggest that it may be possible by the aid of these grafts to extend the scope of tendon transplantation. The most fruitful cause of failure after this operation comes of stressing the tendons too much or too soon, and I believe that once hinge grafts have splinted a foot so as to prevent lateral or medial deviation the residual muscular force may be exploited with the greatest economy and effect. Thus a peroneal muscle which is too weak to procure both inversion and dorsiflexion (say in a case of equino-valgus) by suitable insertion may be made the dorsiflexor of a foot where deviation is prevented by hinged bony splints. We hope to investigate this suggestion more fully in the Surgical Unit at Kasr el Aini Hospital.

I am indebted to Dr. R. A. Gardner for the radiograms which illustrate this paper.

Summary.

A method is described of splinting an unstable foot by means of hinged osteo-periosteal grafts which allow a useful degree of mobility. The hinge is procured by conniving, during after-treatment, at slight movements.

REFERENCE.

[1] An Operation for "Dangle Foot," *Surg., Gynecol. and Obstet.*, xlii, p. 178.

THE TREATMENT OF FRACTURE-DISLOCATION OF THE ANKLE-JOINT BY THE THREE-PIECE SECTIONAL PLASTER.

BY

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(With Special Plate.)

THE treatment of fractures has in many cases become standardized and the results so perfect, when the treatment is efficiently carried out, that normal anatomical union and full function can almost be guaranteed. Fractures of the clavicle treated by Sayre's method, of the shaft of the humerus in Jones's humerus extension splint, those of the elbow in full flexion (with the exception of fractures of the olecranon), fractures of the shaft of the femur by extension, and of the neck of the femur by extension and full abduction in a long spica plaster, are fractures which are treated by a universal method, and, generally speaking, the results are good. There remain others which are treated by various methods, and it is little wonder that the results are not uniformly successful. Fracture-dislocation of the ankle-joint is one which comes in this category, as proved by the numerous splints that have been used in its treatment. The box splint, the blanket splint with two lateral wooden splints, the pillow splint, also with two lateral wooden supports, a posterior moulded plaster splint, Volkmann's trough splint, Dupuytren's, and Syme's horseshoe splint are some of the more popularly used, and are recommended in modern textbooks and writings.

To procure a freely movable ankle-joint with the patient walking without pain after a fracture-dislocation of the ankle is indeed a great accomplishment, but in what percentage of such patients can we claim this? Writing on Pott's fracture Sir Robert Jones[1] states, "Pott's fracture has been generally looked upon as a most disabling accident, and many surgeons of experience complain that perfect function is rarely restored to the ankle." And again, to quote Sir William Wheeler,[2] ". . . yet the treatment and the results are far from being universally satisfactory. It is the old story: Want of proper reduction at the time of the injury and want of precautionary measures to prevent displacement when weight-bearing is permitted." The difficulties appear to be threefold: first, in obtaining accurate reduction; secondly, in maintaining the position over a period of several weeks; and thirdly, in the after-treatment.

Accurate reduction is usually a simple matter, provided a general anaesthetic is administered; the main difficulty arises in maintaining the corrected position. I think it is the experience of most surgeons that the treatment of

these fractures by splints is a most unsatisfactory procedure, and I agree with Cochrane[3] when he writes:

"The ordinary means of splintage, as in the use of the box splint or in the special splints which have been devised from time to time, are too haphazard in this respect; while one of these means is being employed, the fracture redisplaces, or does so subsequent to the patient's return to bed. All the work of reduction and the risk of the anaesthetic go for nothing, and the patient is in the unfortunate position of having to subject himself to another attempt at reduction, with the certainty of the same thing happening again."

Hey Groves,[4] after discussing the treatment of these fractures by various splints, comes to this conclusion: "But if the plaster is applied only after full correction of the deformity and with due regard to the position of the foot, and is removed for massage and movements from the first, nothing can be better." Cotton,[5] writing on these fractures, states: "If the lesion is promptly recognized, there is no difficulty in holding it. I have found it necessary to use plaster-of-Paris from the first, and have employed a position of maximum dorsal-flexion to prevent redisplacement." And again, Roberts and Kelly[6] write: "If anatomical apposition of fragments is known to be present, the foot and leg are placed in a gypsum case, extending from the toes to just below the knee." Finally, Page and Bristow[7] condemn splints in the treatment of such fractures, and state, "Fixation is best secured by means of plaster-of-Paris." I would venture to say that fixation in plaster is the only certain method of maintaining the corrected position of fracture-dislocation of the ankle.

The answer to the question why all fracture-dislocations of the ankle are not treated in plaster casings is twofold: first, the erroneous feeling of the "unknown" beneath a plaster when *x* rays are not easily accessible; and secondly, the results have not been sufficiently good to justify it becoming a standardized form of treatment. The difficulty arises in maintaining the corrected position during the application of the plaster, for with the slightest alteration of position or movement of the hands the dislocation recurs. This is practically unavoidable in the application of a one-piece plaster; momentary slackening of the hands must occur to make way for the turns of the plaster bandage around the foot, and it is at this moment that the dislocation recurs. This range of movement is generally so slight that it is impossible to detect it until the ankle is *x*-rayed, and we find our labours all in vain. Cochrane showed us the way out of this difficulty when he advocated the three-piece plaster of Fiske in the treatment of these cases.

This method was originally advocated by Fiske in the treatment of congenital club-foot, and Cochrane has successfully applied it to the treatment of fracture-dislocations of the ankle. Since then Wheeler and others have advocated it with equal success in the treatment of fractures of the lower third of the leg. I have treated twenty cases by this method, and have found the results exceedingly satisfactory; in no case has the dislocation recurred during the application of the plaster.

The Method.

Full muscular relaxation is essential, either by general or spinal anaesthesia. After a preliminary *x*-ray inspection the ankle is examined and the fracture-dislocation reduced. Over stockinette and a single layer of wool-wadding, plaster 1 is applied, extending from just below the knee to about one inch above the ankle-joint. Here I depart from the customary procedure of bringing the plaster above the knee. Provided the wool is not too thick and the plaster is well moulded below the knee, I have not found this detrimental to the ultimate result; on the contrary, it facilitates the movement of the patient during his convalescence, and he maintains a freely movable joint all through. Plaster 2 is next applied to the foot, extending from the toes to about one and a half inches from the lower end of plaster 1. It is advisable to mould this plaster well around the heel, otherwise it is apt to slip off the foot during the final adjustments. If the assistant holds the foot in as near the corrected position as possible during the application of plaster 2, the risk of pressure sores will be greatly reduced. This is specially liable to occur on the dorsum of the foot at the upper end of plaster 2 when the foot is finally dorsiflexed. The plaster should be trimmed at this point and the wool turned back over it before applying plaster 3.

When plasters 1 and 2 have dried the operator takes the foot and makes the final adjustments. In doing so he must direct his attention to three cardinal points: first, the complete correction of the dislocation; secondly, the accurate apposition of the medial malleolus; and thirdly, the accurate apposition of the torn deltoid ligament. To fulfil the first the ankle is dorsiflexed to its full degree. In order to accomplish this the knee must be flexed to slacken the tendo Achillis and counter-pressure applied to the leg while the operator lifts the ankle well forward. The medial malleolus will come very nearly into line during this manipulation, and a little moulding will get it into perfect position. The foot is finally inverted to secure apposition of the deltoid ligament. While the operator holds the foot in this position the assistant applies plaster 3. The ankle is *x*-rayed the following day in both planes, and if the position is satisfactory and no swelling or discoloration of the toes be present the patient is sent home on the third day and encouraged to get about on crutches. Like most fractures, once perfect apposition is secured the patient complains of little pain.

After-Treatment.

The plaster should remain in place for two or three weeks; at the end of this time it is bivalved and the anterior half discarded. Massage and movement are then commenced and carried out daily. The posterior plaster splint should be retained for a further period of four weeks; it fits the foot and leg like a glove, and no substitute in the way of a splint will ever take its place, for while it is worn we are assured that displacement cannot occur. Six weeks after the injury the posterior half may be discarded, but weight-bearing is not permitted for a further two or three weeks. When this is commenced the inner side of the boot is raised half an inch by the usual method; this boot is worn for at least six months. In heavy subjects it is advisable to support the ankle with an outside iron and inside T-strap over the same period.

Report of a Case.

A man, aged 57, slipped off a haystack, falling about eight feet and landing on his left foot. The foot gave way beneath him and he was unable to rise from the ground. The ankle was found to be greatly deformed, the foot was markedly inverted, swollen, and dislocated laterally.

The man was removed to hospital and *x*-rayed. The skiagram (antero-posterior view) showed marked displacement of the medial malleolus with the usual fracture of the fibula (Fig. 1). The lateral view showed an anterior dislocation and forward displacement of the medial malleolus (Fig. 2).

A general anaesthetic was administered within an hour and a half of admission to hospital, and the fracture-dislocation put up in a three-piece sectional plaster casing.

Radiographs taken the next day showed the bone alignment to be satisfactory (Fig. 3), and that the anterior dislocation and displacement of the medial malleolus had been corrected (Fig. 4). The following day the patient was discharged to his home on crutches. He was radiographed eight weeks later and the positions were found not to have altered in either case (see Figs. 5 and 6).

The patient did not bear weight until ten weeks had elapsed, by which time he had a freely movable ankle-joint. Seen three months later he was walking normally and without pain.

Conclusions.

1. Plaster fixation is the only certain and satisfactory method of maintaining the corrected position of fracture-dislocation of the ankle.

2. The three-piece sectional plaster casing assures the maintenance of the corrected position during the application of the plaster, which a one-piece plaster fails to do.

3. The patient can be discharged from hospital on the third day on crutches with the assurance that the position cannot alter during his absence.

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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

EGYPTIAN BRANCH.

A CLINICAL meeting of the Egyptian Branch of the British Medical Association was held in Cairo on January 16th in the Physiological Department of the Royal School of Medicine, Kasr el Aini, with Dr. R. J. COLEMAN in the chair.

Cases and Radiograms.

Professor A. BIGGAM showed typical cases of Egyptian splenomegaly, pellagra, and ankylostomiasis. He also showed a case of congenital heart disease with normal temperature, no clinical signs of lung involvement, and sputum negative to tubercle, in which *x* rays indicated diffuse tuberculous pulmonary disease. A case of aneurysm of the aortic arch was also shown. The heart was markedly displaced downwards, and to the right of the sternum was an expansile pulsating swelling the size of a hen's egg, which had eaten its way through the fourth costal cartilage. *X* rays showed this to be a sacculation from a large clotted aneurysm of the arch. The patient had experienced no pain or discomfort at any time, and only came to hospital because he noticed this local swelling.

Dr. R. A. GARDNER showed a series of slides made from skiagrams taken in the radiological department of Kasr el Aini Hospital. They included a case of ventriculography, where the method had been successful in correcting a clinical diagnosis of frontal tumour by demonstrating an infratentorial lesion. Skiagrams from a patient showing Madelung's deformity of the wrist (unilateral) also showed an arrest of development of the fourth metatarsal, but no definite sign of rickets was found in the usual sites. Slides were also shown of a large aortic aneurysm projecting through the anterior chest wall without symptoms other than those due to the external local swelling. Pyelograms were shown of a case where, in addition to the usual appearances, an irregular shadow in the iliac region communicated by a narrow short connexion with the normal ureter and suggested an accessory kidney and ureter. A striking case shown was that of a boy suffering from congenital heart disease who had not, nor so far as could be found had ever had, any symptoms of pulmonary disease, yet whose lung skiagram gave a picture indistinguishable from that seen in miliary tubercle. Slides from several other cases were shown, including a normal cholecystogram, a fracture of the spine demonstrated with lipiodol, a case showing multiple bone metastases, and a large calcified renal tumour.

Dr. SHAHEEN BEY showed specimens of foreign bodies removed from the oesophagus.

The following cases from the surgical unit, Kasr el Aini Hospital, Cairo, were shown:

Professor A. K. HENRY showed: (1) A case of rectal prolapse treated by a modification of Lange's method of shortening the rectum from behind after removing the coccyx. (2) A case of shoulder-drop treated by slinging the scapula to the vertebral spines with two strips of fascia lata. (3) A case of talipes calcaneo-valgus stabilized by hinged grafts. (This case is recorded in detail at p. 663.) (4) A case of luxation of both shoulders, after birth palsy, in a girl aged 11, with a cinematograph film showing the skilled movements of the feet, with which she was able to feed herself and to sew.

Dr. AHMED EL SAYED HANDOUSA (Resident Surgical Registrar) showed slides to illustrate a simple way of fixing the tendons transplanted for varus deformity. Dr. Handousa's description of the device was as follows:

> The best way of fixing a transplanted tendon is to pass it through a hole in bone (Gallie and Le Mesurier, *British Journal of Surgery*, 1924, xii, 289). As the tibialis anticus is too short to be passed through the base of the fifth metatarsal bone in cases of varus deformity of the foot, the following device has been carried out to compensate for that shortness and to secure a very strong insertion to the outer side of the foot.
>
> The extensor hallucis longus, which Jones and Lovett recommend as an auxiliary, being a long tendon, is detached from its insertion and transferred to the outer side of the foot. It is drawn through a hole in the base of the fifth metatarsal bone, and its end is split into two limbs, as shown in Fig. 1. The two limbs are passed through a hole in the short tendon of the tibialis anticus, looped back and sutured to themselves and to that tendon. The extensor hallucis longus is again sutured to itself at A and B (Fig. 2). The ends of the two tendons, being now firmly attached to one another, are buried under the periosteum of the cuboid bone.

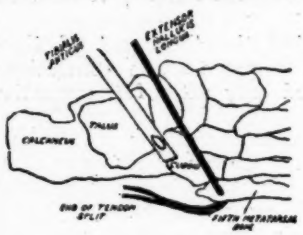


FIG. 1.

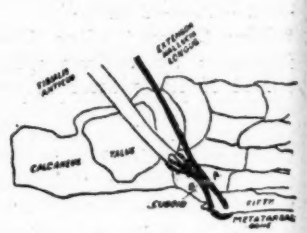


FIG. 2.

I am indebted to Professor A. K. Henry, director of the surgical unit, Kasr el Aini Hospital, who used this method for the *right* foot of the girl shown in Figs. 5 and 6 of his paper on hinged grafts, for permission to publish it. (See p. 664 of this issue.)

Reports of Societies.

THE ACETONE BODIES IN DIABETIC COMA.

AT a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland on March 18th, Dr. R. J. ROWLETTE in the chair, Dr. A. R. J. DUNGAN read a paper on the part played by the acetone bodies in diabetic coma.

Dr. Dungan gave a brief review of the literature to show that the actual part played by the acetone bodies in producing the symptoms of diabetic coma was very unsettled. Experiments were then described which indicated that dogs and cats could be free from symptoms while having in their blood concentrations of aceto-acetic and β-hydroxybutyric acids greater than those commonly found in human diabetic coma; it was concluded, therefore, that neither of these acids was likely to exercise a direct toxic effect in this condition. The experiments also showed that with the former acid, and probably also with the latter, when sufficient had been administered to a dog there resulted a curious delayed intoxication, leading to prostration and death, the latter commonly occurring at a time when the acetone bodies had almost disappeared from the blood. One feature of this intoxication was a resistance to the action of insulin, such as occurred in human diabetic coma. It was suggested that this latter condition might possibly represent a similar "indirect" intoxication with one or both of these acids. Further experiments with acetone were described which showed that the effects of this substance were totally different from those of aceto-acetic acid.

Dr. A. R. PARSONS said that he had always had great difficulty in getting oxybutyric acid in the urine, and asked if there was any danger of producing hypoglycaemia in a case of diabetes by pressing insulin, when the urine was full of acetone and diacetic acid, but only a very slight amount of sugar was present.

Dr. H. R. MICKS referred to the resistance to insulin which was sometimes met with apart from ketosis, and asked what caused this resistance. He mentioned a case recently reported, in which insulin had done very little towards lowering the blood sugar, and said it looked as though there was something else in the body, not a ketone, in diabetic cases which interfered with the action of insulin.

Dr. E. T. FREEMAN asked what was the behaviour normally in diabetic dogs in regard to the formation of ketone bodies, and if the effect of the ketone bodies in dogs in the advanced stage of diabetes was at all comparable with what it was in human beings, and if ketone bodies formed as rapidly in dogs as they did in human beings.

Dr. DUNGAN replied that cases of diabetic coma had been rather rare in the hospital in which he had worked in America; when they did occur the patients were given massive doses of insulin, and ketosis disappeared almost immediately. Large doses of insulin should not, in his opinion, be given to a patient who had acetonuria but was not in definite coma. He did not know what caused the resistance to insulin in some patients, unless it was gross pancreatitis, or carcinoma. He referred to the peculiar resistance of dogs to the action of narcotic drugs.

Aneurysms of Abdominal Arteries.

Dr. W. D. O'KELLY showed a specimen from a case of ruptured aneurysm of the iliac artery. A woman, aged 68, while in a tram one morning, became weak, went home, and died that evening. The necropsy showed a ruptured aneurysm of the left common iliac artery. Haemorrhage had apparently occurred first into the retro-peritoneal tissues; the peritoneum had later given way, resulting in extensive intraperitoneal haemorrhage. The heart was enlarged, and showed evidences of coronary disease, but the valves were comparatively healthy. There was atheroma of the aorta with the linear cicatrization typical of a syphilitic lesion.

Dr. T. T. O'FARRELL referred to a case of aneurysm of the coeliac artery, in which it had not been possible to make the diagnosis for some time after the man had been in hospital. He had been admitted as a case of anaemia, but ultimately the aneurysm was found, and he lived for about three weeks.

Dr. R. J. ROWLETTE considered aneurysm of the iliac artery comparatively rare. It was interesting that the patient had lived for ten hours after the rupture. Dr. H. F. MOORE asked if a Wassermann test had been performed, and Dr. A. R. PARSONS inquired whether a Wassermann test after death was reliable. Dr. O'KELLY stated that he did not attach much value to the Wassermann test performed on serum collected at *post-mortem* examinations.

Haemangio-endothelioma.

Dr. A. HALPENNY exhibited specimens of haemangio-endothelioma taken from a child, aged 8 months, who was admitted to hospital with two tumours, one above the superior angle of the left scapula and the other over the right deltoid. The former was about the size of a walnut, and was surmounted by a cutaneous naevus. The latter swelling was smaller, and the skin over it was normal. On palpation the tumours were found to be lobulated, and had the consistence of sebaceous cysts. The patient's mother stated that she had first noticed the swellings when the child was a week or ten days old; within the past two months they had noticeably increased in size. The tumours, which lay in the subcutaneous tissue, were removed, and the affected portion of skin over the larger growth was excised; they were solid, and were separated by a capsule from the surrounding fatty tissue. On microscopic examination of sections both tumours were found to have a fibrous capsula surrounding lobulated processes, and the periphery of the lobules presented the typical appearance of haemangioma hypertrophicum, showing proliferated capillaries forming columns of cells several layers deep, with a central lumen. The individual endothelial cells were rich in cytoplasm, and had roughly circular nuclei. The centre of the lobules had undergone endotheliomatous degeneration. The cells were no longer arranged in columns, but lay very much closer together, forming a conglomerate mass, and the more numerous nuclei almost filled the cells. There was no attempt at lumen formation.

TREATMENT OF MENORRHAGIA.

AT a meeting of the Liverpool Medical Institution, on March 17th, Dr. R. E. ROBERTS and Mr. ST. GEORGE WILSON contributed a joint note on the treatment by *x* rays of certain menstrual disorders, especially menorrhagia, with a report of thirty-four cases.

Emphasis was laid on the difference in technique adopted in patients of different age. In older patients the aim of treatment was to bring about an artificial menopause, while in patients under the age of 40 the aim was to avoid, if possible, any interference with fertility and to perform castration only as a last resort. Attention was drawn to the fact that a castration dose in a patient over 40 years would not be effective in a younger woman, thus increasing the margin of submaximal dosage in the latter; in a young patient the process of castration would take longer. In the group of older patients a permanent amenorrhoea was successfully brought about by *x* rays in every case; in younger ones amelioration of symptoms was produced in most of the cases by submaximal dosage, and it was rarely necessary to proceed to complete castration. Most of the cases had been treated unsuccessfully by other means before employing *x* rays. Reference was also made to the irradiation of the spleen as an adjunct to the treatment of excessive bleeding, and to the irradiation of the ovaries by very small stimulating doses in dealing with primary amenorrhoea.

Psoriasis.

Dr. R. W. MACKENNA, in a paper on psoriasis, regretted that, though psoriasis was one of the most ancient of all diseases, there was, as yet, no certain means of curing it. Its cause was still unknown, though a definite familial tendency to it was undoubtedly traceable in about 30 per cent. of cases. The determining cause of the first outbreak was usually some slight trauma, but after the first attack a patient was likely to suffer from recurrences for the rest of his life. The psoriasis papule, which was the initial lesion, was a characteristic pathological entity, and it should be possible to diagnose psoriasis from it. The appearances produced by systematic curetting (grattage) were extremely characteristic. The anatomical conditions on which these phenomena depended were demonstrated by a microphotograph of a section of a papule. The paper was illustrated by lantern slides and many coloured illustrations, and Dr. MacKenna gave an account of a series of experimental observations which had been carried out in his clinic at the Royal Infirmary, with the help of Dr. Elizabeth Hunt. They had not, however, succeeded in discovering any new and certain method of curing the disease.

JAMES MACKENZIE INSTITUTE.

ON March 22nd, at the James Mackenzie Institute for Clinical Research, St. Andrews, Dr. N. MCLEOD read a paper on abdominal pain and hyperalgesia, and dealt with some points in connexion with the actual state of affairs found within the abdomen in cases where there was disturbance of the viscero-sensory and viscero-motor reflexes. He divided the causes of pain in intra-abdominal disorders into two main groups, the mechanical and the inflammatory. The first group included the muscular movements of the gastro-intestinal tube, and he described two cases to illustrate the different types of pain experienced in disordered peristalsis as compared with exaggerated peristalsis. Referring to the production of abdominal pain by traction on the peritoneum by peritoneal bands and adhesions, he quoted cases of abdominal pain where such dragging had occurred but where the nature of the symptoms could only be explained by assuming that the cause lay in the exaggerated muscular movements in the wall of the intestine. He mentioned one case in which it was possible to assume definitely dragging or adhesions to parietal peritoneum though no symptoms had arisen. In the inflammatory group he discussed the mechanism of production and the localization of pain in local peritonitis, both visceral and parietal. Apparently the viscero-sensory reflex was similarly disturbed in both varieties, but in the case of parietal peritonitis there was an additional factor—namely, the involvement of the cerebro-spinal nerve endings in the extra-peritoneal tissue by direct spread of the inflammation. He concluded that in cases where the visceral peritoneum alone was involved the symptoms were those referable to the organ which was covered by the inflamed peritoneum, while in local parietal peritonitis pain was localized over the area of peritoneum affected.

Reviews.

THE OPTICAL CONVENTION OF 1926.

THE Optical Convention held in April, 1926, at the Imperial College of Science and Technology, South Kensington, London, was presided over by the Astronomer Royal of Great Britain, Sir Frank Dyson, F.R.S., and opened by the Prime Minister, Mr. Stanley Baldwin. As can be seen from the accounts published in our issues of April 17th and 24th, it proved a most successful gathering. The *Proceedings*[1] of the scientific work presented to the meetings fill two handsome well illustrated quarto volumes of over one thousand pages, which are needed to give the presidential address, and the individual papers, which number nearly one hundred, proper publicity. Besides, there is a third and supplementary volume giving an account of the exhibition which was part of the convention. In the presidential address Sir Frank Dyson drew some interesting contrasts between the position of optical science and manufacture at the present date and at dates of earlier conventions which had been held before the war. Then, British fine glass work was depressed by the prestige of Jena, which made successful competition practically impossible. During the war we had been dependent upon our own efforts, and the position had altered to the advantage to this country. In 1918 the demand in this country for optical glass and optical instruments requiring glasses of special optical properties was met by supplies of which 95 per cent. were of home production, the remaining 5 per cent. being imported from France. The total amount of optical glass made in this country in 1918 was at the rate of 20,000 lb., nearly 9 tons, a month. That was the peak. The position of British glass makers and opticians is still well maintained, both in variety of type and in excellence of quality; all the optical glass needed is obtainable here. To-day special stress is to be placed upon the production of fine camera lenses. In this some British firms have obtained notable successes, particularly in lenses for aerial photography, which is now of great value in surveying work. Fine wide-angle lenses for the recording of theatrical performances, and the very different sort of lens used in telephotography are made also, and there had been an immense improvement in the production of prismatic binoculars; until now British firms can hold their own with any in the world. In cinematograph work, which demands a lens that shall take 4,800 pictures a second, there has been a triumph of mechanical skill, and in the art of illumination. As regards projectors, the improvement in the optical system and the lamp has placed British manufacturers in the forefront. The President then drew attention to the value of the work done by the National Physical Laboratory, the testing of instruments there carried on, and the number of researches in which the large and highly trained scientific staff are employed which could not easily be carried out by private firms. The laboratory, he said, was both a stimulus and a guidance to the manufacturer.

The subject-matter of the papers covers a wide range. There are many of a highly technical kind dealing with the manufacture of optical glass and optical elements, and the design of optical instruments for special purposes. There are papers on the testing of colour vision, photometry, and illumination, some dealing with ophthalmic problems, many on photography and its special applications in cinematograph work. An arrangement of value in the publication of the papers is the provision of a short abstract at the commencement of each. This is a convenience to the reader, and might be extended to other publications with advantage.

Among the contributions that are of special interest in connexion with medicine are: "A new instrument for investigating colour vision," by Dr. R. A. Houstoun; "A colour vision spectrometer," by Professor Peddie; "Colour tests by means of Lovibond's tintometer," by F. E. Lovibond; "The mathematics of colour vision," by E. A. Baker; "The eye and its functions," by Professor Elliot Smith; "Muscular imbalance," by Dr. Margaret Dobson; "A mechanical theory of heterophoric correction," by J. B. Reiner; "The influence of illumination in visual acuity," by Messrs. H. Banister, H. Hartridge, and R. J. Lythgoe; and "The influence of facial asymmetry upon ophthalmic prescribing," by Harry L. Taylor. The paper on the influence of illumination in visual acuity is one of special importance; the authors sought to establish a means of testing visual acuity which would be applicable to a large number of people simultaneously, and did not cause fatigue. The method found most satisfactory was the brief exposure of capital letters. A fixation mark is given so that the subject may know where to look for the test object; the duration of exposure is no more than 0.089 second. While artificial illumination of 2 to 4 foot-candles is fairly adequate for a variety of purposes, their results show that this gives only about one-half the visual acuity the eye can achieve with better illumination. For maximum acuity an intensity of 100 to 200 foot-candles is necessary. These results confirm observations made in industrial research, and should provide a welcome stimulus to the provision of better lighting in workshops where fine processes are done.

The separate volume of the catalogue[2] of instruments exhibited is a study in itself. Some of the new perimeters illustrated are very fine instruments; but it is curious to find such a well known instrument as Harman's scotometer exhibited under the name of a trader as a new production of that firm.

[1] *Proceedings of the Optical Convention, 1926.* London: The Optical Convention, 1, Lowther Gardens. (Cr. 4to, two volumes, pp. 1055; illustrated. £3 1s. 3d. post free.)

[2] *Catalogue of Optical and General Scientific Instruments.* (Cr. 4to, pp. 336; illustrated. 6s. 9d. post free.)

ENZYMES.

THE book entitled *Enzymes: Properties, Distribution, Methods, and Applications*[3] is the product of co-operation between an agricultural microbiologist, Dr. S. A. WAKSMAN, and a doctor of medicine, Dr. W. C. DAVISON.

The evidence regarding enzymes is scattered through the literature of a dozen different sciences, and, moreover, since the subject presents many special difficulties, this evidence is of very varying value. The authors state that they have consulted over 2,000 references, and modestly claim that their aim has been "to piece these irregular and loosely fitting fragments together into a mosaic upon which future studies may rest."

The study of enzyme actions plays an important part in numerous sciences, including physiology and pathology, and the facts collected in this monograph will be of service to a very wide range of scientific workers.

The imperfect state of our knowledge of the laws of ferment action is reflected in the general arrangement of the monograph, for only the first sixty pages are devoted to a consideration of general laws, while the rest of the book is occupied in the main by descriptions of the actions of individual ferments.

The writers have fulfilled their purpose very well and have rendered accessible to students a mass of evidence which hitherto it has been impossible to run to earth without long and tedious search through an exceptionally widely scattered literature.

[3] *Enzymes: Properties, Distribution, Methods, and Applications.* By Selman A. Waksman, M.S., Ph.D., and Wilburt C. Davison, M.A., M.D. London: Baillière, Tindall and Cox. 1926. (Med. 8vo, pp. xii + 761; 10 figures. 25s. net.)

HYDROGEN ION CONCENTRATION.

Hydrogen Ion Concentration[4] is an English translation of the second edition of *Die Wasserstoffionenkonzentration* by Professor L. MICHAELIS, who is well known for his powers of lucid exposition of the difficult problems that arise when the principles of physical chemistry are applied to living systems. His book has been generally recognized as the standard work on hydrogen ion concentration since its first appearance in 1914. The first half of the volume deals with the manner in which the hydrogen ion concentration is deter-

[4] *Hydrogen Ion Concentration.* By Leonor Michaelis, M.D. Vol. I.: Principles of the Theory. Authorized translation from the second German edition by William A. Perlzweig, M.A., Ph.D. London: Baillière, Tindall and Cox; Baltimore: The Williams and Wilkins Company. 1926. (Med. 8vo, pp. xiv + 299; 32 figures, 43 tables. 22s. 6d.)

mined by the laws of electrolytic dissociation. The physico-chemical principles governing hydrogen ion concentration are complex and difficult, and this is particularly the case in systems, such as the blood, which contain a mixture of several buffer substances, but the author succeeds in explaining these problems in a remarkably simple and lucid manner. The second portion of the volume deals with the ions as sources of electric potential differences, and the author discusses at length the significance of potentials at phase boundaries. Many of the problems involved are still unsolved, but the author gives a full account of modern theories. This subject is of great importance for the understanding of the behaviour of colloidal particles, and in addition is one of the most promising lines of approach for the elucidation of the properties of the cell. The translation is by Professor W. A. PERLZWEIG of Johns Hopkins University, and although the task of translating the closely reasoned and highly technical argument must have been peculiarly difficult, it has been carried out in a very satisfactory manner. The length of the book has not been increased greatly, for although the translation appears several times as large as the original, yet the difference is due almost entirely to thicker paper and larger type. With regard to the printing, it seems to us to have been a mistake to discard the useful arrangement in the original, where subsidiary points were printed in small type, for this plan undoubtedly made it easier to follow the main argument. Another change open to criticism is that a certain proportion of the statistics and experimental records which were included in the text in the original are given as tables in the translation, and have been thus displaced from their proper position. This tends to produce confusion in certain instances; for example, Table 10 comes a full page before the reference to it in the text. Professor Michaelis contributes a preface to the translation, and he has made additions to the text on various subjects in which important recent advances have been made.

Hydrogen Ion Concentration of the Blood in Health and Disease,[5] by Professors J. H. AUSTIN and G. E. CULLEN, is one of a series published in this country as well as America with a view to providing short critical digests of the recent views on subjects of particular importance in therapeutics. The authors give a summary of the more important work that has recently appeared on the subject of the reaction of the blood, and the volume concludes with a very useful bibliography of ten pages. The letterpress only occupies 75 pages, however, and within this limit the authors have endeavoured to give an account of the factors governing the acid-base equilibrium in the blood in health and disease, and also to describe the methods used for determining hydrogen ion concentration. Unfortunately the factors that determine the acid-base equilibrium of the blood are complex, and it is impossible to describe them shortly and yet be intelligible to any but a specialist in this subject. These monographs are, however, intended for others besides specialists in the physical chemistry of blood plasma, and a perusal of the book suggests that an excessive condensation has been attempted. For example, the Donnan theory of membrane equilibrium is mentioned and dismissed with a dozen lines and a couple of equations, and no one who is not fully conversant with this theory would be likely to follow the argument. The book is a very useful work of reference for those who are fully conversant with the theory of the subject, but we do not think it will be of much service to anyone who is not fortunate enough to possess this knowledge.

[5] *Hydrogen Ion Concentration of the Blood in Health and Disease.* By J. Harold Austin and Glenn E. Cullen. Medicine Monographs, Vol. VIII. London: Baillière, Tindall and Cox; Baltimore: The Williams and Wilkins Company. 1926. (Med. 8vo. pp. xi + 75; 8 figures. 9s. net.)

THE LAYMAN IN MEDICINE.

FORMERLY the layman was content to hold a few popular beliefs in medical matters. Nowadays, as a result probably of health campaigns and propaganda, he considers himself entitled to break out in print. The methods he adopts in doing so may be illustrated by four publications before us. First there is the method of the layman who is connected with some of the numerous sciences or institutions which contribute to the progress and development of medicine. Of this method Mr. FREDERICK L. HOFFMAN, consulting statistician to the Prudential Insurance Company of America, is an exponent in his works on cancer. Next comes the method of the author who has taken an interest in a particular disease, often perhaps because he, or a near relative, has suffered from it. Frequently this author's object is to advocate a form of treatment which has not obtained universal acceptance. This appears to be the case in Mr. DAVID MASTERS's book, *How to Conquer Consumption*.[6] Thirdly, there is the method of the anti-everything (including orthodox medicine) person, who feels a call to spread his doctrines for the benefit of the benighted majority. Of such is Mr. REDDIE MALLETT, who covers the whole field in his *Book of Health*.[7]

Mr. Hoffman's connexion with a large insurance company, combined with industrious searching of medical literature, has enabled him to put together an interesting pamphlet on *Cancer in Native Races*,[8] a phase of the cancer problem which, he thinks, has not received sufficient consideration. He has investigated the question among native Indians of the United States, Canada, and Central and South America, but so far with "negative results." Later on Mr. Hoffman says that in the United States there is evidence that cancer in the primitive negro population during the period of slavery was extremely rare, whereas at the present time it is almost as common as among the white population. Mr. Hoffman gives details of evidence that he has received or collected from Africa, Asia, and other parts of the world. He believes that carcinomas are of rare occurrence among African natives, but that sarcomas are common. His information is to the effect that cancer of the breast is rare in Japanese women. He is inclined to think that the question, "Why is cancer rare in the tropics?" must be changed to "Why is the site incidence of cancer as seen in the tropics different from that observed in Europe?" And he concludes his pamphlet with the cryptic statement: "the foregoing observations . . . clearly establish the relative incidence of cancer in primitive races not in close contact with the civilization of the white race." What we gather from the pamphlet is that nothing is clearly established except the probability that cancer is less common among primitive than among civilized races, and the possibility that this is due to differences in diet and nutrition. There can be no doubt of the industry and energy with which Mr. Hoffman pursues his researches; and further evidence of this, and of the extraordinary capacity he possesses for extracting information from public bodies and from experts, is shown in his third preliminary report of the *San Francisco Cancer Survey*.[9]

The methods of Mr. David Masters are not quite so admirable as those of Mr. Hoffman, notwithstanding the honour that Sir Bruce Bruce-Porter feels "at being invited to write an introduction for so excellent a book." It is quite true that Mr. Masters "has succeeded in putting the teachings and ideas of medical men into language understandable of the people," but the proposed campaign of victory, consisting of a mass of new laws and regulations and the examination of the whole nation by tuberculosis specialists, combined with M. Henri Spahlinger's serum and vaccines, will probably be difficult of achievement.

Mr. Reddie Mallett objects to cooking, objects to "medical decrees" (which he says are no cure for disease), objects to aperients, objects to surgery, and objects to the pyorrhoea specialist. His *Book of Health* informs the reader how to live on a diet of fruit juice, and to cure all ailments by means of lemon juice and olive oil. At the end of his book he provides a dictionary of treatment, from which we gather that the treatment of hydrocephalus is the same as that for hydrocele. Olive oil and lemon juice are rubbed over the part, and the juice of

[6] *How to Conquer Consumption.* By David Masters. London: J. Lane, The Bodley Head, Ltd. 1926. (Cr. 8vo, pp. 251; illustrated. 6s. net.)

[7] *The Book of Health.* By Reddie Mallett. London: Watts and Co. 1926. (Cr. 8vo, pp. vii + 240. 7s. 6d. net.)

[8] *Cancer in Native Races.* By Frederick L. Hoffman, LL.D.

[9] *San Francisco Cancer Survey.* Third Preliminary Report. By Frederick L. Hoffman, LL.D.

three lemons is swallowed daily. Curetting, we learn, is a humiliating and unnecessary operation—inject lemon juice and attend to the diet. Lemon juice is the most marvellous disinfectant yet "unknown" to medical science. It cures piles, syphilis, and cancer; so that many pages of dictionary might have been saved by mentioning lemon juice under one heading: "panacea."

MEMORIAL VOLUME TO SIR WILLIAM OSLER.

LAST year Bulletin IX of the International Association of Medical Museums formed a memorial number to Sir William Osler; it contained numerous appreciations from his friends and admirers, more than a hundred successful illustrations, mainly of Sir William and of the title pages of his published books and papers, and an elaborately classified and annotated bibliography of his writings occupying 130 pages. This volume of more than six hundred pages, most successfully edited by Miss MAUDE ABBOTT, was published privately and noticed in these columns (1926, i, p. 879). The 1,500 copies of the first impression were exhausted within six months, and to meet the continued demand a second impression[10] became necessary. This opportunity has been taken to add ten appreciations and reminiscences, a new sonnet, "The Healer," by Marion Osborne, and three new illustrations, including a fine colour print of J. S. Sargent's great picture of Osler, W. H. Welch, W. S. Halsted, and Howard Kelly.

Among the new appreciations are contributions from Sir E. Sharpey-Schafer, Dr. L. G. Rowntree, and two from Dr. Lawrason Brown of Saranac Lake, a short one entitled "Osler and Trudeau," and an address delivered at the inaugural dinner of the Osler Club, Saranac Lake, N.Y., on December 9th, 1925, with many interesting personal reminiscences. Like Dr. Rowntree and many others, Dr. Lawrason Brown caught the habit of book collecting from his former teacher and friend.

As before, this interesting memorial to a great and deeply regretted personality is attractively got up, and it is clear why Miss Maude Abbott's real labour of love has been so entirely successful.

NOTES ON BOOKS.

IN his contribution to the study of heredity in tuberculosis[11] Dr. R. PLA Y. ARMENGOL, whose essays on tuberculosis were noticed some time ago (JOURNAL, September 27th, 1924, p. 579), maintains that tuberculous infection of the foetus is very frequent, if not constant, in cases of active tuberculosis in the mother, while children whose fathers are suffering from active tuberculosis present a specific predisposition to develop the disease. On the other hand, the inheritance of tuberculous infection or the predisposition to tuberculosis is not equivalent to disease, so that the aim of the practitioner should be to increase the resistance of the individual with a tuberculous inheritance or predisposition and enable him to transmit his resistance to his descendants.

In *The South American Handbook*[12] for 1927, edited by Mr. J. A. HUNTER, the would-be tourist or emigrant can obtain a wealth of information. The first chapter describes the continent, its seasons, its health, its lack of roads, and its facilities for travel, with a glossary of Spanish and Portuguese terms, a list of weights and measures, and the text of the Monroe Doctrine. A brief description of the places of interest at the ports of call on the voyage out leads to an alphabetically arranged account of the various republics and countries of South America, with their products, resources, and tours that may be made in them. The chapter on the Falkland Islands includes an account of Sir Doveton Sturdee's action in 1914, and the interesting information that the Argentine Government does not recognize the British occupation, and presents an annual protest against it. The emigrant to South America is warned to take special precautions, especially if moneyless, and speculative emigration is discouraged.

[10] Bulletin No. IX of the International Association of Medical Museums and Journal of Technical Methods. *Sir William Osler Memorial Number: Appreciations and Reminiscences.* Second impression. Edited by Maude E. Abbott, M.D. Privately issued at 836, University Street, Montreal, Canada. 1927. (6¼ × 9½, pp. xxxix + 634; 103 illustrations.)

[11] *Contribucion al estudio de la herencia en la tuberculosis.* By Dr. R. Pla Y. Armengol. Barcelona: Tipografia Emporium. 1926.

[12] *The South American Handbook, 1927.* Edited by J. A. Hunter. London: South American Publications, Ltd. 1926. (Cr. 8vo, pp. lxviii + 645; with maps. 2s. 6d. net.)

THE AUSTRALASIAN MEDICAL CONGRESS

OF THE

BRITISH MEDICAL ASSOCIATION,

DUNEDIN, NEW ZEALAND.

(Continued from page 628.)

THE SCIENTIFIC SECTIONS.

COMBINED MEETINGS.

FOURTEEN combined meetings were held during the Congress in order to enable the various sides of different medical problems to be considered. Dr. L. E. BARNETT, President of the Congress, took the chair at the sessions in which goitre, spastic paralysis, and cancer were the subjects of discussion.

Goitre.

The Sections of Medicine, Surgery, Radiology, Preventive Medicine, and Pathology met together to consider goitre, Dr. H. SUTTON (New South Wales) being the opening speaker.

Dr. Sutton said that enlargement of the thyroid had a district incidence in Australia. Similar geographical, geological, and rainfall conditions were associated throughout, goitre being limited to the coastal plains with heavy rainfall. The incidence in heavy rainfall areas was explained by the withdrawal of iodides from the soil. No information was available with regard to goitre in animals. While the evidence was in favour of the soil theory, the study of the water supplies in the northern tableland and north-west slopes in New South Wales suggested associated water supplies, tank or surface but not artesian water being concerned. In school children goitre was associated with good health; the incidence was well distributed throughout the population, and no association with previous illness had been detected. The lack of association with toxic thyroid meant that prevention had not been emphasized or even tested in New South Wales. The best test of a goitrous area was the incidence of the disease in boys, in whom it was always abnormal. Simple enlargement of the thyroid and exophthalmic goitre were to be clearly distinguished, no relation between them having been established.

Dr. C. E. HERCUS (New Zealand) had found goitre most abundant on the more or less gravelly plains and river flats, and along the narrower flood plains of the large rivers. District incidence was an established fact. The occurrence of simple and toxic goitres constituted a serious problem in many districts. From the study of the iodine content of some 500 samples of soil obtained from all districts in the Dominion, it was found that the amount of iodine in the soil bore an almost inverse relation to goitre incidence. Sedimentary soils, especially if sandy or gravelly, contained least iodine. A general survey of the iodine content of foodstuffs had been undertaken, and a comparative study made of the goitrous and non-goitrous districts. The foods richest in iodine content were edible seaweed, sea-fish, eggs, wholemeal cereal products, leafy vegetables, and milk. The findings had been checked by clinical studies of iodine excretion in goitrous and non-goitrous districts, and were in favour of the view that goitre was caused by an iodine intake deficiency. The problem was to meet this biological deficiency in such a manner as to be harmless. The universal use of salt containing 1 part of potassium iodide in 250,000 parts was recommended as a compulsory preventive measure.

Professor A. M. DRENNAN (New Zealand) dealt with the pathology of goitre and showed a series of illustrative slides of different types of pathological changes. He gave the results of work by C. S. Hicks, K. C. Roberts, and himself on the iodine content of normal and pathological thyroids obtained by operation or at necropsies. He showed how similar changes occurred as regards the histology and iodine content in *post-mortem* glands and in specimens obtained by operation, but insisted that the difference was one of "mass." The gland excised for clinical goitre was larger than a gland obtained at a necropsy, showing similar

changes causing no clinical symptoms. He described some work on the iodine content and histological structure of animal glands which indicated that in endemic areas the gland was poor in iodine as compared with the non-endemic districts. He showed how the hyperplastic, secretory, or active type of tissue was lower in iodine than the colloid, or resting type, and how a clinically "toxic" goitre might be a diffuse colloid of high iodine content, or a nodule goitre with active areas, the active parts being low in iodine, the colloid parts higher. A scheme of goitrous derangements of the thyroid was presented, based on the total mass of the gland, its histological structure, iodine content, and the pathological changes correlated with clinical disturbance. Deficiency of iodine was the most important initial factor. The thyroid exposed to such deficiency must respond in one of two main ways to maintain the necessary supply of hormone. It might uniformly increase the storage area to accommodate a larger supply of colloid which was at a lower iodine concentration. This produced the simple colloid goitre, a common response in the endemic form; it was a compensated gland, and might remain quiescent indefinitely. If the deficiency was marked the gland continued to enlarge and became noticeable. It was adapted to a low iodine intake; if excess of iodine was supplied it became overcharged with hormone, and toxic symptoms might appear. The condition then became a diffuse colloid toxic goitre. The gland might respond also by parts hypertrophying or by parts becoming "active secretory," discharging the hormone as it was made; so arose the nodular or adenomatous goitre. Iodine given to such a patient might, if the mass effect was sufficient, produce definite "toxicity"; the secretory areas making the iodine into hormone, and passing it into the circulation. The whole gland might become active secretory, perhaps compensating, but producing no reserve store. Any extra demand for hormone meant a larger active gland, the primary exophthalmic goitre. Iodine exhibited in this case was of temporary benefit, but did not effect a permanent cure. The place of iodine was in prevention, and the earlier it was used the better.

Dr. R. R. STAWELL (Victoria) distinguished simple goitre, adenoma in simple goitre, adenoma with hyperthyroidism, and exophthalmic goitre as suggested by Plummer. In simple goitre, the endemic type, symptoms were rare; the patients were occasionally either hypothyroid or showed nervous symptoms, but the basal metabolic rate was not raised. They could be treated with iodine, or with thyroid extract, or thyroxine controlled by determinations of the basal metabolic rate. The treatment of adenoma, whether simple or toxic, was surgical. There was often heart failure with auricular fibrillation, for which digitalis and quinidine were of doubtful value. The characteristic symptoms of exophthalmic goitre were not those of increased metabolic rate, such as tachycardia, but eye signs, nervousness, and crises (Plummer). They were attributed to the production of a hypothetical iodine-free product of the thyroid, and the condition was termed "dysthyroidism." In Graves's disease hyperthyroidism and dysthyroidism were both present. Medical treatment was unsatisfactory and Dunhill's subtotal thyroidectomy was the correct practice. Iodine was of value in the form of Lugol's solution; this was given in 10-minim doses, but a massive dose of 100 minims distributed over two hours was given in the case of a crisis. The cause of the disease was unknown; until it was understood surgical treatment was necessary.

Dr. CARRICK ROBERTSON (New Zealand) dealt briefly with the pathology of goitre, including the simple, adenomatous, adenomatous with hyperthyroidism, and exophthalmic forms. He recommended that every cardiac decompensation case should be thoroughly examined for thyroid enlargement. Adenomata and their cystic degenerations called for surgery. The whole thyroid should be exposed or palpated at the operation in order that smaller adenomata in other parts of the gland should not be missed; if they were overlooked they would grow and cause the so-called recurrence. Occasionally a wandering adenoma was found, usually under the sternum. In Graves's disease surgery was indicated, good technique being essential. Much loss of blood was serious; perfect haemostasis and gentle operating were essential in securing a low mortality rate. The exhibition of iodine for a short period before the operation, and for a few days afterwards, made for safety. The best time to operate was usually about a week after the course of iodine had been begun, in the "iodine remission." When it was necessary to operate after *x*-ray treatment, the fibrosis increased the difficulty of the operation.

Dr. C. C. ANDERSON (New Zealand) considered that radiologists could safely take up the position that radiotherapy was indicated as the main line of treatment in goitre, following the usual medical treatment. It could be employed no matter how bad the condition of the patient: the slight early cases produced the best results, although desperately ill patients often gave the most startling ones. A diffuse goitre of the colloid type did not always respond favourably to radiation, whereas in the ordinary parenchymatous type irradiation was useless, although these patients would probably give better results if an operation followed one or two applications of the rays. Another type of case—namely, that in which, despite operation, the condition had recurred—might receive some assistance from the radiologist. Until recently Dr. Anderson had used a current of 10 milliamperes, with 3 millimetres aluminium filtration, an alternate spark-gap of 6½ inches, and a focal skin distance of 12 inches. Each side of the gland was treated for four to five minutes, the thymus being included. The patient was observed until no further improvement followed, when the next dose was given; usually up to six doses would be employed in the course of twelve months, and this would be sufficient. Radium had not proved so successful, but was sometimes useful for treating the very nervous patient. The advantage of *x* rays lay in the great variety and shade of penetration and quantity of radiation which could be used, allowing of almost perfect accommodation to individual needs. Rest was an important factor and enhanced the action of the *x* rays.

Metamorphosis of Simple to Toxic Goitre.

This subject was discussed by the Sections of Medicine and Pathology, Dr. D. GIFFORD CROLL (Queensland) taking the chair.

Dr. S. V. SEWELL (Victoria), opening the discussion, referred to the extreme vascularity of the thyroid. It was possible, he said, that one duty of the thyroid might be to act as a detoxicating mechanism for the blood passing through it. Any physiological stress, such as menstruation, might be met by increased vascularity in a healthy gland, but if the gland was unhealthy hyperplasia might occur. An adenoma might be formed, and in later life, when the gland was atrophied, this adenomatous tissue might, if the occasion arose, produce thyroxine and hyperthyroidism result. Toxins, iodine treatment, and psychic stimulation were some of the many factors which might cause this hyperthyroidism. He then referred to the striking effects produced by the exhibition of adequate doses of iodine in cases of exophthalmic goitre. He mentioned Williamson's work, and said that should it prove to be substantially correct it would in no way invalidate Plummer's conception of the dysthyroidism of Graves's disease and its possible causal association with the presence of an incompletely iodized thyroxine in the blood stream.

Dr. A. H. TEBBUTT (New South Wales) read a paper on the morbid anatomy of tumours of the thyroid gland. He first dealt with the embryology and life-history, and gave an account of the orthodox view. He next discussed aberrant and accessory thyroid tissue and the tumours concerned, illustrating his remarks by numerous microphotographs. He showed four cases of lateral cervical thyroid tissue, all of which were pathological. In three no connexion with the thyroid gland proper could be established, and in three there was no evidence of pathological change in the gland itself. He suggested that in the earliest embryonic stage the thyroid cells were migratory, and established outlying nodules which came into close association with the cervical lymphatic system and lost their connexion with the thyroid gland. One interesting feature was the fact that in his cases the appearance of lateral cervical thyroid tissue was restricted to one side.

In support of Ewing's view that tumours of the thyroid might be embryonic or adult growths, and that both groups included adenomata and carcinomata, he showed specimens of various forms of malignant and benign tumours all of which appeared to be of the adult type. He demonstrated that the adenomata passed from the simple replacement of alveolar cells by lymphoid tissue through various stages up to the typical Riedel struma.

Dr. F. T. BOWERBANK (New Zealand) emphasized the great importance of the basal metabolic rate in relation to disease of the thyroid (1) in diagnosis, (2) to estimate the progress of the disease and the result of medical and surgical treatment, and (3) to determine the time to operate and the extent of operation. After mentioning briefly the methods of determining the basal metabolic rate, he showed several lantern slides of graphs illustrating his remarks. In conclusion, he stated that the basal metabolic rate was the most consistent of all the signs and symptoms of hyperthyroidism or thyrotoxicosis. Taken in conjunction with the clinical signs and symptoms it was a valuable guide in diagnosis, in the progress of the disease, and in estimating the time and extent of an operation, if required. A patient who gave a reading of over 115 (100 taken as zero) on two consecutive days had hyperthyroidism. The closed method was most suitable for the use of medical practitioners; its use, especially where operation was contemplated, would lower the mortality rate.

Dr. W. SUMMONS (Victoria) dealt with goitre in Gippsland, the wide littoral of the eastern portion of Victoria. Most of the thyroid enlargement discovered had conformed to the simple parenchymatous type. None of the children exhibited evidence of hyperthyroidism; the physical development was up to standard, and no defects were found that separated them in any way from children in other localities. He concluded that in Gippsland among school children of either sex endemic goitre of a simple parenchymatous type was prevalent. There was no associated undue prevalence of toxic goitre, but there was some inconclusive evidence that the thyroid hyperplasia might be an effort to counteract a state of hypothyroidism. An investigation was being conducted of the iodine content of water and food.

Diet.

Dr. E. W. GIESEN (New Zealand) took the chair for a combined meeting of the Sections of Medicine and Preventive Medicine to consider questions relating to diet.

Dr. P. H. BUCK (New Zealand) opened the discussion with a paper on the food of the Maoris. He said that before the colonizing expedition of 1350 A.D. the Maoris were in what was termed the food-gathering stage. The food-producing stage was marked by the difficulty of growing foods such as the kumara, which were of tropical origin. Mammalian food was scarce, almost the only land mammal eaten being man himself. Fish and shellfish were eaten whole, and with the liquid contained in the shell formed the staple food supply. They were gathered in their proper seasons, and some of them were preserved by drying. Almost every kind of bird was eaten, the principal ones being the wood-pigeon, the parrot, and the tui. The entrails were cooked and eaten with the bird. Birds were preserved in their own fat for reserve supplies. The cooked and beaten rhizome of the New Zealand bracken was the most important source of carbohydrate. It was chewed and the fibrous material was rejected. For green vegetables they used the top of the taro, the sow-thistle, and leaves of *Solanum nigrum* and of other plants. Fruits and berries of the karaka, tawa, and hinau were also used. Food was cooked by means of the earth oven, a process which amounted to steaming; grilling was also used. There were two meals a day—one in the morning and one in the late afternoon. For variety of food an interchange was often made under the form of gifts. Fresh stream or river water was the only beverage. The Maori had to procure his foods for himself, his foods were hard and fibrous, and thus arose the necessity for chewing. The result was a magnificent bodily physique.

Dr. R. W. CILENTO, Director of Public Health in the Territory of New Guinea, reporting on diet and nutrition in Northern Melanesia, said that the native diet had been shown by analysis to be deficient in protein, fat, in vitamins A and C, and in salt; only irregularly were there additions which compensated for these deficiencies. There was, moreover, an increasing diminution in the supplies of flesh foods. He correlated these deficiencies with the poor physique of the natives, and with the high death rate from respiratory and intestinal diseases. He considered that the racial susceptibility to disease was due to dietary deficiencies rather than to any inherent lack of racially acquired immunity. In support of this he stated that the tendency to tuberculosis disappeared when the natives emigrated to a land where food supplies were more adequate. But for the liberal supply of sunlight the conditions would be much worse.

A paper on the relation of gastric function to the chemical composition of the blood, prepared by Dr. F. L. APPERLY (Victoria), was read by a delegate. It was stated that the existence of a relation between blood chemistry and gastric function was probable. If the bicarbonate content of the blood was increased the tone of the stomach muscle was also increased. In hyperpnoea from cardiac and other causes the alveolar carbon dioxide and plasma bicarbonate were low, and anorexia and vomiting were common. He had found that the plasma bicarbonate varied directly with the total chloride of a test meal, up to one and a quarter hours. Since gastric tonus varied with total gastric chloride it must also vary with the plasma bicarbonate. Also high acidity led to rapid emptying of the stomach, and a high plasma bicarbonate was found at the same time. The chloride of the blood appeared to vary inversely with that of the stomach, and patients with gastric hypotonus had low plasma bicarbonate and high chloride. Injection of ammonium chloride reduced the plasma bicarbonate and also gastric acidity and tonus, while rebreathing did the reverse. These experiments had therapeutic applications.

Professor H. P. PICKERILL, C.B.E. (New Zealand), in a paper on diet as a cause of sepsis in the alimentary canal, said that highly prepared, non-sapid carbohydrate food underwent lactic acid fermentation in the mouth, and failed to stimulate the alkaline saliva which would neutralize and wash it away. Taste was important in digestion, and non-sapid food did not stimulate the glossopharyngeal nerves. Organic acids were required for this, and they were lacking in such food; much alkali was present in food and used in drugs. Such food led to salivary stasis and bacterial growth. He thought that the toxins produced stimulated the sympathetic, which would explain the syndrome of intestinal toxaemia.

Dr. S. A. MOORE (New Zealand) believed that the "optimum tonic diet" excluded all denatured food; included abundance of the protective foods, such as contained fat-soluble A, calcium, no excess of muscle, but included the viscera of animals; and provided raw food as a salivary stimulant at the end of the meal. The errors in modern diet might not lead to obvious effects, but they tended to the gradual deterioration of the individual or of the race, providing fit soil for the incidence of the more conspicuous diseases. He testified to the value of the optimum tonic diet in cases of alimentary, renal, and other disorders, and hoped that the next congress would deal with the parts played in health by exercise, ventilation, rest, psychology, posture, and diet.

Dr. T. RUSSELL RITCHIE (Samoa) attributed the splendid physique of the Samoan to the plentiful food supply and to the hard work necessary to secure it. The diet was largely vegetarian, with occasional additions of fish and meat. There were no deficiency diseases among the Samoans, but it remained to be seen what effect would be produced by the recent tendency to eat imported foodstuffs. If there had been any deterioration in physique it had been due to hookworm, which was now, however, being controlled. The danger age for children was between 6 and 18 months, when marasmus was common through the sudden transference to adult diet, but by public health advice on diet the infant mortality had been reduced from 200 to 120 per 1,000 in two years.

Dr. ELIZABETH GUNN (New Zealand) said that she had held six health camps, each of between four and six weeks' duration, for a total of 550 children suffering from malnutrition. The general principles on which the camp was

run included the supply of plain but wholesome food and the keeping of regular hours, with plenty of sleep. Children who on arrival were nervous, food-faddy, and irritable put on weight and improved in general health in an astonishing manner. Some, previously regarded as mentally backward, were now up to their average age in classwork. She had had remarkable results with a milk class, where fifty undernourished children were each given half a pint of milk a day.

Pulmonary Tuberculosis.

Dr. G. J. BLACKMORE (New Zealand) opened a discussion on pulmonary tuberculosis in infants and children at a combined meeting of the Sections of Pediatrics and Radiology. He said that in the course of seventeen years out of 1,800 patients with pulmonary tuberculosis only thirty-seven were below the age of 13. No great difference existed as between adults and children; the same diagnosis applied equally to both. In dealing with diagnosis he emphasized the fact that infection could be proved by reactions to von Pirquet's and Moro's tests. The relative frequency of bovine and human infection varied greatly in different countries. Tuberculosis was essentially a disease contracted in childhood, the adult being relatively immune to infection. When it became manifest in an adult it was in the great majority of cases a recrudescence of disease contracted in childhood. Infection occurred almost entirely indoors; it was therefore the home conditions during childhood which they had to consider if infection was to be prevented. They must deal with the child if they wished to prevent the infection from becoming a serious disease and to abolish adult tuberculosis.

Dr. C. C. ANDERSON (New Zealand) exphasized the fact that in radiography error was caused by comparing the appearances in the chest of a child with those of an adult. Pulmonary tuberculosis could be shown once the tubercles began to form, but the difficulty was to know how to distinguish the early pathological appearances from those of the normal or average chest. He believed that lesions commenced in very young children in the lower lobe and spread centripetally to the hilum; cases of miliary type were rare. He showed various radiographs to illustrate the difficulty in making a diagnosis, and suggested that the radiographs of New Zealand chests differed from those of the Old World chests on account of the greater acuteness of the infection met with in the former country.

Dr. J. F. MACKEDDIE (Victoria) gave a demonstration to a meeting of the Sections of Medicine and Radiology of artificial pneumothorax, which was illustrated by cinematograph films. He said that the long-delayed acceptance by British workers of this means of treatment was due to division of opinion as to the class of case most suitable for it, and to the dangers attendant upon it. Less harm would result from its more frequent use than from wholesale neglect of it. It required unsparing *x*-ray help; and before practising it the operator should have a sound knowledge of anatomy and pathology derived from necropsy experience. The cinematograph film showed Lillingston's apparatus and the detailed method of performing the artificial pneumothorax. An account of the difficulties encountered and the means of dealing with them was followed by *x*-ray pictures illustrating the use of artificial pneumothorax in breaking down adhesions, in performing simultaneous filling and evacuation, and in the treatment of lung abscess. The question of refills, the rate of compression, the optimum compression point, the choice of gas and of needle, and the use of lipiodol by the laryngeal or preferably by the tracheal route, were fully discussed.

Hydatid Disease.

A combined meeting of the Sections of Medicine and Radiology was held to consider the medical aspects of hydatid disease, the performance of artificial pneumothorax, and some points in connexion with the examination of the cerebro-spinal fluid.

Dr. R. R. STAWELL (Victoria) opened the discussion on hydatid disease by enumerating the criteria on which diagnosis was based; these included the toxic (anaphylactic) symptoms, the *x*-ray examination, the complement fixation test, the Casoni test as interpreted by the Melbourne workers, and the occasional presence of eosinophilia and of hydatid hooklets. The toxic symptoms and the manner of their production and manifestation were fully discussed with reference to differential diagnosis. The "hydatid diathesis" was contrasted with the anaphylactic condition. The physical signs and symptoms which should make the physician suspect and link up the diagnosis, and the pitfalls in complicated cases, were mentioned. By using all diagnostic resources the error of diagnosis in Melbourne Hospital had been reduced from 40 to 2 per cent. Since the infestation occurred during childhood directly from dogs, which had been infected from eating the raw offal of sheep, the only plan of prevention was to prohibit the feeding of dogs with hydatid-infected raw material.

Dr. H. R. DEW (Victoria) said that the toxic manifestations following rupture or puncture of a hydatid cyst were to be attributed to anaphylaxis; they could not be due to that small amount of ergotoxin-like substance which was present in hydatid fluid, for the absorption of quite minute amounts could produce the symptoms. The initial absorption which produced the sensitization probably occurred in the early stages of embedding of the parasite before it became walled off from the surrounding tissues. This sensitization was present in 90 per cent. of cases (as determined by the Casoni test), but varied greatly in degree. Leakage due to trauma, puncture, or surgical intervention produced anaphylactic symptoms of benign, severe, or of the gravest character, depending on the amount and rapidity of the absorption and the degree of sensitization. The type and range of symptoms—cutaneous, gastro-intestinal, respiratory, cardio-vascular, and nervous—were described. He stated that general anaesthesia greatly reduced or abolished the anaphylactic state, but after the anaesthesia had worn off symptoms might occur. It was important to remember that the exploratory puncture of even a small cyst was dangerous, and that the degree of sensitization varied greatly. An operation under local anaesthesia was not without risk. The mode of reaction to the Casoni test might prove to be a useful pre-operative guide.

Dr. NEIL GUTHRIE (New Zealand) dealt with the *x*-ray examination of intrathoracic and subdiaphragmatic hydatid disease and its complications. He said that though he was especially interested in the *x*-ray aspect, he advocated a combination of all resources in diagnosis. Contrary to textbook impressions, pulmonary cysts were not always readily seen. Uncomplicated cysts might be masked by the heart or might be mistaken for pleural effusion or hyperplasia with a primary or even a secondary sarcoma. The difficulty was increased by complications such as suppuration, spontaneous rupture into the pleural cavity with or without cicatrization, and rupture from an exploratory needling when there had been no previous radiographic examination. Abdominal cysts might be seen if they were on the upper surface of the liver or spleen; a lateral as well as an anterior or posterior view was required. They might be missed after rupture or suppuration, or might be confusing if calcification had occurred. Use might be made of pneumo-peritoneum or of the displacement of a cyst by the barium-filled stomach or intestine.

The diagnosis and surgical aspect of hydatid disease formed the subject of another combined meeting, in which the Sections of Surgery, Radiology, and Pathology took part.

Dr. C. H. KELLAWAY (Victoria) opened the discussion with an account of the diagnostic tests in this disease, with special reference to investigations of the immunological aspect of hydatid infestation in progress at the Walter and Eliza Hall Institute, at Melbourne, of which he is director. In the earliest stage of the disease the only test likely to be of value was the intradermal, which might give a delayed as well as an immediate response; eosinophilia might also be present. At a later stage, when there was a large uncomplicated cyst, with intact laminated membrane and thickened adventitia, there was, as a rule, no eosinophilia, but both phases of the skin

reaction were observed, except in rare cases when the cyst fluid was of low antigenic power. With the formation of daughter cysts, eosinophilia might be present; there might be a reaction to the complement fixation test and often a high titre of antibody might be revealed. The Casoni test might for some time give only an immediate wheal, though later both phases of the skin reaction might be found. Rupture or suppuration might be quiet, with continued absorption of the antigen for long periods, or they might occur suddenly with the production of anti-anaphylactic phenomena due to the outpouring of antigen. The complement fixation reaction was usually positive, indicating a high titre of circulating antibody. The intradermal test might fail, though the appearance of the immediate wheal without any delayed response was common. After some months, when the absorption of antigen had greatly increased, both the immediate and delayed reactions occurred. After death of the parasite or cure by operation, the amount of complement fixation might be small or absent, though the result of the Casoni test, both immediate and delayed, would continue for some years, the delayed response usually being the first to disappear. The Casoni test was of little value when there was a previous history of hydatid infestation, but it was most valuable in early and uncomplicated cases. In complicated cysts, or in cases of recurrence, or of residual cysts, the complement fixation test was of the greatest value. The simple precipitin test of K. D. Fairley was useful where there was no accommodation available for the employment of the complement fixation test.

Dr. P. CAMERON (New Zealand), speaking from the radiological standpoint, referred to intrathoracic and abdominal diagnosis; he emphasized the necessity of correlating a clinical examination and the clinical test for hydatids with the *x*-ray evidence in making a differential diagnosis. Mention was made of the therapeutic value of *x* rays in preventing transplantation following operation; this was not practicable in the liver region.

Sir GEORGE SYME (Victoria) dealt briefly with the history of the treatment of hydatid disease. The ideal treatment consisted in completely extirpating the parasitic cyst with its contents and pericyst entire, closing the incision without drainage. In cysts in the kidney and spleen he recommended Bond's operation, and for the majority of liver cysts Hamilton Russell's operation.

The Cancer Problem.

Professor P. MACCALLUM (Victoria) opened a discussion on the present position as regards cancer; all Sections concerned were invited to take part. He referred to the great public interest in the cancer problem, which indicated the magnitude of the effort being made to solve it. Statistical records showed a steadily increasing cancer death rate in many countries, but this could be explained by better diagnosis and the survival of more people to the cancer age. Though there had been a steady increase in the cancer group, some individual cancer types had actually shown a definite decline. He referred to Miss Slye's work on heredity in relation to cancer, and to Dr. Gye's work on the filter-passing virus and chemical specific factor. Tissue culture studies were yielding results of great importance, notably Warburg's research into the metabolic processes of cells, and Heaton's investigation of the factors affecting the multiplication of fibroblasts and epithelia. Efforts directed especially to treatment had received much attention; he mentioned Blair Bell's lead treatment, Lumsden's immunological work, and the radiological investigations. The search for a general clinical test that would be of value in the diagnosis of cancer had so far been comparatively unrewarded. Botelho's serum reaction had so far proved the most successful of a number which had been elaborated; none so far had been found to have any dependable value as a clinical aid. There was much need for the dissemination of knowledge of early symptoms.

(To be continued.)

Lister Centenary Exhibitions.

WELLCOME HISTORICAL MEDICAL MUSEUM.

IN the Hall of Statuary of the Wellcome Historical Medical Museum in Wigmore Street, London, a remarkably full collection of objects of interest connected with Lister's career has been brought together by the conservator, Mr. L. W. G. Malcolm, and was opened on Monday last. This consists of photographs and portraits of Lister, of his family, and of the houses he lived in, testimonials and diplomas, etc., and instruments used in his researches, together with specimens of the various dressings and ligatures introduced and used by him at various times. There are also many photographs of his associates.

Portraits and Groups.

Of the portraits the most striking is the oil-painting of Lord Lister painted by J. H. Lorimer, R.S.A., which has been lent by the University of Edinburgh, to whom Lister bequeathed it. It was presented to him by his former colleagues and pupils of the University in July, 1895, on his retirement. Another most interesting oil-painting, by Gsell, has been lent by the French Government. It represents the embrace of Pasteur and Lister on the occasion of the celebration of the jubilee of the former in Paris in 1892. The likeness of Pasteur is striking, but the face of Lister is not visible. This is a much more realistic representation of the group of chief actors in the memorable scene than that in the large, almost panoramic picture (see p. 659) of the whole assembly at the Sorbonne, of which also a reproduction is exhibited. Among many other portraits the silhouettes of members of Lister's family are interesting, and particularly so is the original of the delicate and charming portrait of his mother, drawn by his father, which was reproduced in Sir Rickman Godlee's biography. The painting of Upton House, West Ham, where Lister was born, and a number of other views of the house and grounds remind us of the vast changes that have occurred in the neighbourhood of all great towns in the last hundred years. Relics of his funeral are shown, lent by the Glasgow Lister Memorial Committee.

Photographs illustrating his professional and academic career are also exhibited. Lister was an honorary fellow or member of nearly every society interested in natural science or medicine or surgery in the world, and the diplomas and certificates which accompanied these honours cover a large space of the wall of the exhibition room. Here are portraits of a large number of those whose names were best known in surgical circles in all countries in the last century, as well as of those less celebrated whose privilege it was to act as his assistants, house-surgeons, and dressers.

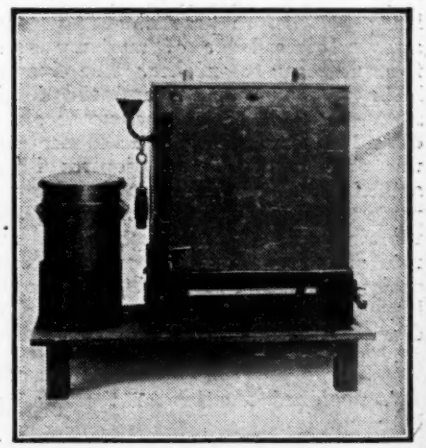


FIG. 1.—Machine as devised by Lister for the preparation of antiseptic gauzes.

Early Apparatus.

In cases on the floor and sides of the hall are some of the original apparatus which Lister used in his investigations, or facsimile reproductions of them, such as his machine for preparing sterile antiseptic gauze. By means of this apparatus, which is shown in Fig. 1, the gauze was

sterilized by heat and the antiseptic substances or liquids diffused throughout its substance. In Fig. 2 is shown the "hot-box," as Lister called it, which he devised for the incubation of microbes. This rudimentary apparatus was the forerunner of the incubator or autoclave of the present

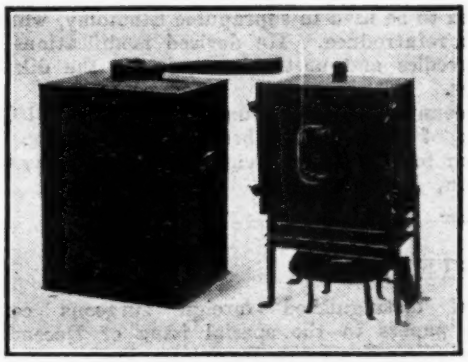


FIG. 2.—Lister's hot-box.

day. It had no thermostat by which the heat could be regulated and kept at any desired point on the thermometer. It was heated by a gas-ring, the flame of which was kept from contact with the box by several thin metal plates or false bottoms, which may be seen in the figure.

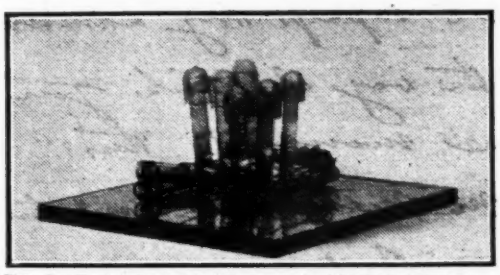


FIG. 3.—Test tubes used by Lister in his experiments on lactic fermentation.

Apparently the only means of keeping the temperature nearly constant was the tap on the gas supply. Rudimentary and rough as this apparatus was, some very good work was done with its help. Fig. 3 shows a group of glass tubes covered by loosely fitting glass caps, but not really sealed in any way. In these, after many trials, Lister succeeded in keeping milk free from fermentation without the aid of chemicals or heat. With their aid he studied the phenomena of lactic acid fermentation.

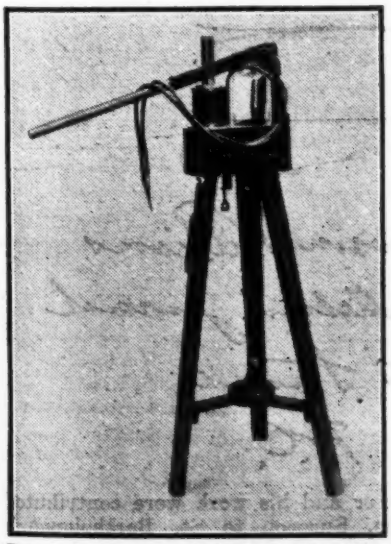


FIG. 4.—Pump spray ("donkey engine") as used by Lister.

Soon after he began to use the carbolic spray during operations, he found that the hand spray, which had been devised by Sir Benjamin Ward Richardson as an ether-freezing apparatus, was inadequate, and that it put the neuro-muscular systems of his dressers to too severe a test. He then devised what became known as his "donkey engine," which is shown in Fig. 4. It will be seen that this was worked by a lever in the hands of an assistant, somewhat after the fashion of a primitive fire-engine. He also used a spray worked by foot-bellows, a specimen of which is in this exhibition. The steam spray was the last stage in this evolution, two of the earlier types of which are shown in Fig. 5. Still larger and more elaborate engines were finally employed, but they did not differ in principle from these two. Specimens of his catgut ligature containers are also among the exhibits.

We are struck by the simplicity but practical usefulness of some of these things; by studying them and the collection of dressings and chemicals the evolution of antiseptic surgery may be followed step by step. Although some, like the carbolic spray, whether worked by hand, foot, or steam, have been left behind in the ascent, yet they had their uses in the successive stages of the arduous climb towards that perfection which is not likely ever to be quite reached.

FIG. 5.—Steam sprays as used by Lister.

The Patents of Baronetcy, of Barony, and of Arms of Peerage of the Realm are also exhibited, with the proud motto: "Malo mori quam foedari," which may be freely rendered as "Death before dishonour."

The Lister Ward.

The greatest triumph of this remarkable exhibition is the reconstruction of the essential part of the Lister Ward at Glasgow out of the original materials and with much of the original furniture and equipment, which preserves indefinitely the scene where pyaemia and other hospital diseases were once rampant, where "Died" was a much commoner end of the clinical record than "Discharged" until Lister's antiseptics banished those scourges from it. Besides this section of the actual building (of which a photograph is reproduced at p. 685), a remarkably effective diorama gives the onlooker a very realistic impression of the whole ward.

We are informed that the exhibition, which on Thursday last was the scene of a reception at which Sir StClair Thomson and Professor A. Young gave addresses under the Presidency of Sir W. Watson Cheyne, is to remain open until May.

The photographs illustrating this article are the copyright of the Wellcome Historical Medical Museum.

THE LISTER INSTRUMENTS AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

This collection of instruments which had been Lister's was bequeathed to the College by his nephew and biographer, Sir Rickman Godlee. Besides the customary armamentarium of a surgeon the collection includes a number of appliances which were devised for special purposes by Lister himself. His abdominal tourniquet, which he had made for use in a case of iliac aneurysm in which he assisted his father-in-law, Syme, in Edinburgh, was very efficient, but he was not satisfied with this first pattern and modified it again and again. It was not till some time later that he found that he had been anticipated in the invention by Pancoast of Philadelphia. His sinus forceps, which has become a standard instrument, was devised for extracting small sequestra and for the introduction of drains of various kinds. These may almost be called delicate instruments, and they require excellence of material and workmanship for efficiency. His urethral forceps for the removal of calculi from the prostatic portion of the urethra was a very efficient and well devised

instrument. One of its chief merits was that when the blades were separated and the calculus was grasped, the shank took up less room in the urethra than when the blades were closed. This gave the operator more freedom of manœuvre than an ordinary forceps would allow. The lithotrite which he used was copied from one exhibited by Bigelow when he visited London. He had a special hook made, which he inserted into the tendon of the quadriceps cruris, just above the upper fragment of a fractured patella, with which he drew it down into apposition with the lower fragment before twisting his wire sutures. His work in the treatment of fractures and diseases was that of a pioneer. The long steel or iron pegs which he used as a temporary means of fixing fractured bone ends in position are remarkable from the fact of their being square in section. They were driven into round drill-holes, and he considered that they were easier to insert than round pegs or nails. Also their shape left room for the escape of blood or serum from the bone.

Lister had his own form of hernia knife and special retractors to be used in suprapubic lithotomy, which he did much to reintroduce. He devised modifications of cleft-palate needles and urethral sounds for the dilatation of strictures.

An account of these instruments at the Royal College of Surgeons of England has been written by Mr. C. J. S. Thompson for the Lister Centenary celebrations this week at Boston, Massachusetts.

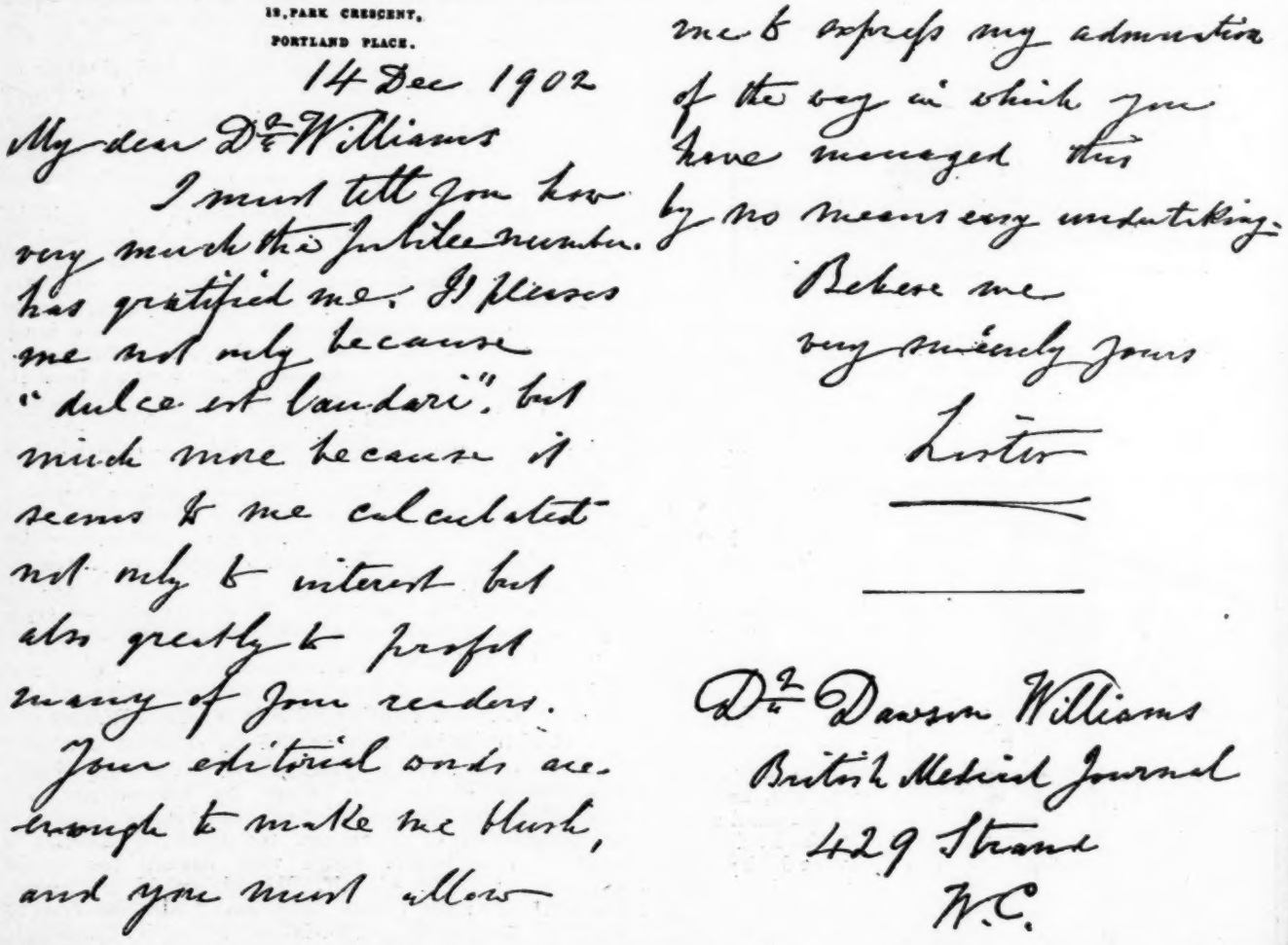
A LETTER BY LISTER.

THE letter reproduced in facsimile on this page was written by Lord Lister in his own hand to the Editor of the BRITISH MEDICAL JOURNAL on the day following the publication of the Lister Jubilee Number, which bore date December 13th, 1902.

Joseph Lister passed the examination for the degree of Bachelor of Medicine of the University of London in November, 1852, and was admitted a Fellow of the Royal College of Surgeons of England on December 9th of that year. It was therefore thought appropriate to celebrate the jubilee of his entrance into the medical profession by publishing a special number of the BRITISH MEDICAL JOURNAL which should contain some tributes to his great service to surgery, and through it to suffering humanity, and some account of the steps by which these great results were attained. That issue included as frontispiece a reproduction of the portrait by Hugh Riviere, for which Lord Lister gave the artist several special sittings; the original is in the possession of the British Medical Association, and hangs in the Hastings Hall of its House at Tavistock Square.

Several distinguished foreign surgeons contributed valuable papers to the special issue of December 13th, 1902, including Ernst von Bergmann, Professor of Surgery in the University of Berlin; M. Lucas-Championnière, Surgeon to the Hôtel-Dieu, Paris; Oscar Bloch, Professor of Clinical Surgery in the University of Copenhagen; Professor von Mikulicz-Radecki, of the University of Breslau; and Professor Francesco Durante, Director of the Surgical Clinic in the University of Rome.

Other tributes to Lister and his work were contributed by Mr. Howard Marsh, Surgeon to St. Bartholomew's Hospital and afterwards Professor of Surgery at Cambridge; by Sir Alexander Ogston, Regius Professor of Surgery in the University of Aberdeen and President of the British Medical Association in 1914; by Dr. D. Berry Hart, Professor Thomas Annandale, and Professor John Chiene of Edinburgh; by Sir Hector C. Cameron of Glasgow; and by Sir William Watson Cheyne, a successor of Lister in the Chair of Clinical Surgery at King's College, London.



19, PARK CRESCENT,
PORTLAND PLACE.

14 Dec 1902

My dear Dr Williams

I must tell you how very much this Jubilee number has gratified me. It pleases me not only because "dulce est laudari", but much more because it seems to me calculated not only to interest but also greatly to profit many of your readers.

Your editorial words are enough to make me blush, and you must allow me to express my admiration of the way in which you have managed this by no means easy undertaking.

Believe me
very sincerely Yours
Lister

Dr Dawson Williams
British Medical Journal
429 Strand
W.C.

British Medical Journal.

SATURDAY, APRIL 9TH, 1927.

"LET US NOW PRAISE FAMOUS MEN."

THIS exhortation from the ancient commendation of benefactors has been duly observed recently. The celebration of the two hundredth anniversary of the death of that intellectual giant Newton is scarcely over when we find ourselves commemorating the centenary of the birth of Joseph Lister. Some of Newton's earlier researches were concerned with the refraction of light, the problems of achromatic vision, and the production of achromatic lenses for telescopes. It was reserved for Lord Lister's father, Joseph Jackson Lister, to solve these problems as regards the microscope, and to establish claims to scientific eminence which had been almost overlooked in the brilliance of the achievements of his distinguished son until Lord Lister himself did them justice in the *Dictionary of National Biography*. Newton and Lister were both men of modest disposition, not quarrelsome, although not to be shaken in the convictions which they had arrived at by experiment and their powers of reasoning. Lister feared no man or woman, and when Queen Victoria, by the pen of one of her court, wrote strongly urging him to denounce the practice of vivisection, he replied with an outspoken defence of experiments upon animals, couched in the plainest and most uncompromising language, which remains one of the best statements of the case for experimental physiology ever written. Newton had to contend against the overweening claims of that erratic genius Hooke and the criticism of others, but he so much disliked controversy that he long deferred publication of some important discoveries. Lister, in his long and hard struggle to convince contemporary surgeons of the truth of his contentions and the enormous value to mankind of his discoveries, did not become bitter, nor even lose that sweet reasonableness which was inherent in his disposition, and was doubtless fostered by his upbringing in the Society of Friends and by the example and teaching of his Quaker parents. The impressions of his youth were indelible, and although he formally left the Society on his marriage, he did not abandon some of their fundamental principles or their forms of speech.

Not long ago, in considering Sir Berkeley Moynihan's Hunterian Oration ("Hunter and Lister," BRITISH MEDICAL JOURNAL, February 19th, 1927, p. 343), we referred, as did Sir Berkeley Moynihan, to Lister's work in physiology, for not only was he a distinguished physiologist, but one of the founders of the modern science of bacteriology. Throughout the most active part of his career, when his time was much occupied in the practice and teaching of surgery, he, with prodigious industry, continued his exact and careful researches into the nature and growth of fungi and the problems of lactic and some other fermentations. Small wonder if, as his biographer, Sir Rickman Godlee, has told us was the case, his private practice suffered from his lack of punctuality. The number of his achievements has to some extent obscured their importance. His work as a physiologist on inflammation and on the coagulation of the blood was notable enough of itself to have secured him fame. Equally notable were his investigations in micro-pathology and fermentation. The advances he made in operative surgery, and especially in the surgery of bones and joints, were numerous and important enough to have made the reputation of any hospital surgeon; but all these were overshadowed by his great achievement in the control of diseases and septic processes, and in the invention of the aseptic absorbable ligature, the use of which made secondary haemorrhage after the tying of arteries a surgical rarity, instead of an ever to be dreaded accident in all cases of amputation.

Lister was ever ready to sacrifice his personal comfort and pecuniary advantage to what he felt to be his duty to his fellow creatures. As Professor of Clinical Surgery in Edinburgh he held a position which left little or nothing to be desired. A large private practice, a great reputation, splendid hospital opportunities, and the love and admiration of a great class of students who hung upon his words—all were his. The death of his father broke the last strong bond that bound him to London; but he doubtless felt that the leaders of surgery in London would not be converted until he could place a great object-lesson before their eyes, and that to do so he must sacrifice much in order to return to the scenes of his youth. A chilly welcome awaited him in some quarters. Instead of the crowds of enthusiastic students and practitioners who listened to him and watched his practice in Edinburgh, he had to be content with the attendance of a bare dozen at his lectures and operations. His colleagues on the staff of the hospital were at best coldly and critically courteous, and a section of the medical press was decidedly hostile; but we are proud to recall the fact that this JOURNAL urged the authorities of King's College to make the appointment, and when they had done so we wrote (BRITISH MEDICAL JOURNAL, October 6th, 1877, p. 490): "The selection which the authorities of King's College have made has done honour to their judgement and will add largely to the usefulness and lustre of their school; while it adds also to the glory and the greatness of the surgical profession in London, from which Mr. Lister sprang and to which he returns." Two years later, in commenting on the discussion opened by Sir William (then Mr.) MacCormac, at a meeting of the South London District of the Metropolitan Counties Branch of the Association, we wrote as follows: "We heartily congratulate ourselves and the profession that Mr. Lister's coming to London has been so speedily followed by a signal triumph of that great principle in surgery which had been accepted everywhere else almost before it was even listened to in London. It was with the conviction that this necessary triumph would follow that we strongly urged the authorities at King's College to put aside small traditions and petty jealousies, and to invite the great London surgeon, who had succeeded Syme in Edinburgh, to assume the mantle which had fallen from the shoulders of Fergusson in London. In doing so, the authorities of King's College had to brave much opposition, to have the courage of their opinions in the face of objections and deprecatory communications from persons eminent in professional standing; but they obeyed what we believed then, and are still convinced, to have been a sound law, and set an example which we hope will have a permanent influence in elevating the tone and strengthening the principles of responsibility in public appointments in London hospitals. Mr. Lister has been but two years in London, and already he may say that he 'came,

saw, and conquered'; for the principle of antisepticism has now so strongly asserted itself in London hospitals that it is bound to make its way and to establish itself here as firmly as elsewhere throughout the world. . . . this meeting will remain an historic event in the records of British surgery."

Glasgow, of which the hospital authorities did not show a due appreciation of Lister while they had him on the staff of the Royal Infirmary, last week celebrated his centenary with enthusiasm, tempered no doubt with regret that a few obstructives had destroyed the ward in which his first victories were won. Glasgow's loss is London's gain, for all that is left of the ward has followed its hero hither, and as reconstructed has been seen by hundreds at the Wellcome Historical Medical Museum during the celebration this week. Not only did Lister revolutionize the treatment of wounds and immeasurably enlarge the frontiers of the realm of surgery throughout the world, but we believe that he has changed the attitude of surgeons towards natural science and widened their views, so that they now approach surgical problems in a very different spirit from that of some of the leaders of the profession sixty years ago. Surgery when Lister went to Edinburgh was still, as it had been for many centuries, to a great extent a handicraft. He applied the experimental method to it and gave it an insight into the discoveries of Pasteur and an interest in scientific discovery which it has not lost, and, we feel sure, never will lose. Truly he was a great and good man, and we may say with one of his patients, W. E. Henley:

> "We hold him for another Herakles
> Battling with custom, prejudice, disease,
> As once the son of Zeus with Death and Hell."

THE MANY-SIDEDNESS OF LISTER.

THE three discourses delivered during the celebration in London of the centenary of the birth of Lister by three of our leaders in physiology, pathology, and surgery are published in the opening pages of this issue of the JOURNAL. In the article immediately preceding this we remark on the number of branches of scientific research in which Lister distinguished himself, and refer to his work in physiology, to which he made valuable contributions at an early age. It is satisfactory to find so high an authority as Sir Charles Sherrington dwelling on the importance of Lister's physiological researches and praising the skill with which he carried them out. These physiological investigations had no obvious bearing on the great work which was to follow, but they were not only evidence of his acumen, but also afforded him valuable experience and self-training in scientific method. At this time, notwithstanding the fact that he had been educated in what was then one of the most inspiring of the London medical schools, surgery had not fired him with enthusiasm. It was not until he had been some time at Edinburgh working under Syme that he wrote home to his father that he had fallen in love with surgery; but physiology was certainly his first love. In his work on the muscle of the iris, on the skin and hair follicles, and on smooth muscle, that clearness and simplicity of language and restraint of statement is evident which distinguished his work throughout his career. The Quaker training, with its respect for the injunction, "Let your communication be. Yea, yea; Nay, nay," may have had something to do with this by strengthening his innate love of precision and exact truth, and his fear of nothing except of missing the truth. His investigations into the nervous control of arteries in the living frog and bat no doubt led up to his work on inflammation and coagulation of the blood. When we remember that he also investigated pigmentation in the frog and the inhibitory action of visceral nerves, we realize how much he accomplished in the few years during which physiology claimed his attention, but by no means all his time, for he was then busily occupied in surgical work under Syme. There seems no reason to doubt that had he devoted his career to physiological research alone, his would have become one of the greatest names among the searchers out of the secrets of living structures. But this was never likely to follow, if Sir Charles Sherrington is right in thinking that all the time Lister's interest in physiology was really part of his interest in morbid processes and repair, in fact, in inflammation in its widest sense, to the study of which he afterwards devoted those qualities of insight, grasp of detail, and determination to see for himself—to take nothing on trust—which led him on to such beneficent success.

This success in the surgery of the human body has obscured some results of which Professor Sherrington reminds us. By showing the world how to get rid of suppuration in wounds intentionally inflicted he benefited physiology to an extent beyond calculation. When thereby experimental operations upon the lower animals could be undertaken with the assurance that they would heal aseptically, pain could be eliminated in such procedures, carried out, as they are in this country, under anaesthetics, for, as millions of human beings must have found, the healing of an aseptic wound is not painful. Not only has the brute and bird creation profited, but the physiologist is saved the pain and disappointment of seeing his experiments vitiated by suppuration and all its train of consequences. Pavlov's work on digestion, Ferrier's on the localization of cerebral function, and the discovery of insulin, with all that connotes, were only possible in the aseptic conditions which Lister introduced. Therefore, as Sir Charles Sherrington says, it is "with peculiar gratitude that the physiologist brings his tribute of admiration and veneration."

Professor Bulloch's discourse is of special interest, for not only is no man better qualified than he to estimate the value of Lister's work as a pathologist and bacteriologist, but he was closely associated with him for a dozen years in London. Few will gainsay his estimate of Lister, among all the distinguished men of our profession whom he has known, as *facile princeps medicorum*. In estimating Lister's achievements in pathology and in bacteriology, in which latter science he was a distinguished pioneer, it must be remembered that he had no well equipped laboratory with its instruments of precision at hand. His work was done in his study, and his instruments were largely devised by himself. His daylight hours were taken up by other work, and only in the evenings and far into the small hours of the morning could he work at his self-appointed tasks, in which he was cheerfully seconded by his devoted wife, who gave herself ungrudgingly to be his assistant and note-taker with an enthusiasm and patience which well became the daughter of James Syme. This work was undertaken, not only in search of new knowledge, but in order that he might speak to his class with first-hand knowledge of the facts he taught. The problem of the cause and process of coagulation of the blood was closely associated with that of the cause and manner of production of inflammation, for both of them

had to do with the production of suppuration. It is curious, as was remarked by Sir Rickman Godlee and others, that so acute an observer, whom little escaped, should have missed the phenomenon of diapedesis of leucocytes, which had been observed independently by two physiologists years before; their work was overlooked or forgotten till at last the process was described by Cohnheim. It is a somewhat remarkable fact that coagulation, which has been such a commonplace occurrence and has been studied for centuries, should still remain something of a mystery, so that, as Professor Bulloch tells us, it cannot now be said that we have materially advanced in a knowledge of its cause during the seventy years since the publication of Lister's work. It is always interesting to know of a great man's estimate of his own work. Professor Bulloch puts on record Lister's statement, made in 1905, that "If my works are read when I am gone, these" (on pigmentation of the frog and on inflammation) "will be the ones most highly thought of." Most of us will suspect he was mistaken, for his work on bacteriology was of great importance, and his "unsurpassed technique" enabled him to elucidate the problem of lactic acid fermentation. Yet he was not infallible, and when at Pasteur's suggestion he repeated an experiment in a different way and found his error, he freely acknowledged it, for, as he said, "Next to the promulgation of truth the best thing I can conceive that a man can do is the recantation of a published error."

In his address on Lister as a surgeon, Sir Berkeley Moynihan has enlarged on the parts which referred to Lister in his illuminating Hunterian Oration (BRITISH MEDICAL JOURNAL, February 19th, 1927, p. 313). He recalls the state of things in the surgical world before Lister waved an enchanter's wand over the evil spirits of suppuration, pyaemia, and their train, and tells us how terrified Astley Cooper was lest erysipelas should attack George IV after the removal of an insignificant cyst from his scalp, and how helpless he was to prevent infection. This dread of erysipelas in such cases persisted long after Cooper's day. That distinguished surgeon Timothy Holmes, in his authoritative book on surgery,[1] solemnly warned his readers of the danger, related a dramatic story of a fatality, and even suggested the use of caustic instead of the knife when erysipelas was rife. It is a striking example of the backwardness of London surgeons in antisepsis that Mr. Holmes made no allusion to the method as useful in such a case, although the book was published six years after Lister left Glasgow. If such a leader as Holmes was thus blind, what could be expected of the average surgeon?

Sir Berkeley Moynihan emphasizes the important services which, owing to asepsis, surgery is now able to offer to pathology, substituting the living body for the cadaver in the mortuary. Lister, as he says, was as much the parent of asepsis as of antisepsis, if, indeed, they are really two methods. His great discovery was that of the part played by micro-organisms in the production of sepsis. Whether they are destroyed or their numbers are reduced to a negligible figure in the wound or in its immediate neighbourhood is a comparatively small detail. It is due to Lister that the great cavities of the human organism have been laid open to the surgeon and the gynaecologist, so that it is now hard to realize that only fifty years ago, in the year that he came to King's College Hospital, the governors of that institution had forbidden the staff to undertake ovariotomy. To-day the lay public recognizes the curative value of surgery, and Lister's work has brought even the dread and widespread scourge of cancer within the reach of cure by early and extensive operations, so planned as to include all diseased tissue and prevent recurrence.

There is no possibility of estimating the debt which mankind owes to Joseph Lister, and never has the Crown more truly interpreted the wishes of the nation than when it made him a peer.

[1] *Surgery: its Principles and Practice*, London, 1875, pp. 928.

DERMATOLOGY AT THE GENERAL INFIRMARY AT LEEDS.

THE development of the department for the treatment of affections of the skin at the General Infirmary at Leeds presents some points of interest, especially when viewed in connexion with the changes which have been decided upon by the board, and which include the appointment of a new honorary officer whose work will be confined to this department. When, in 1884, the appointment of assistant surgeons was followed by the appointment of assistant physicians, an informal arrangement was come to by the two newly appointed assistant physicians that the skin cases should gravitate to one and the throat cases should fall to the other. For many years the skin cases were thus seen along with the other out-patients on the days of one of the assistant officers. With the increase in the work it was found advisable to segregate the skin cases and to see them on a separate day, so that the honorary officer had three days of out-patient work, one being devoted to diseases of the skin. This plan has prevailed for about twenty-eight years, and under it the department has developed greatly, so that during the year ending December, 1926, 1,247 new cases were seen and the total attendance was 7,258. The board has now decided to appoint a physician in charge of the dermatological department. He will be required to have the qualifications necessary for a physician to the Infirmary, which are the possession of a degree in medicine of a university of the United Kingdom and either the Fellowship or Membership of the Royal College of Physicians of London. He will be placed in complete charge of the department, for which adequate accommodation is to be provided, and he will have placed at his disposal six beds for adults—three male and three female—and four cots, a total of ten to start with. In all probability the new officer will desire to see out-patients two days a week, and there is no doubt that the numbers mentioned above will tend greatly to increase, not only by the transfer of cases to a greater extent from the other departments of the Infirmary, but by an increase in the number presenting themselves for treatment at the institution. This is an almost invariable experience in connexion with similar developments of any department. The relation of the new department to the electro-therapeutic department and to the venereal department has been the subject of careful consideration. Arrangements have been made for the development of a self-contained electro-therapeutic department, so that the officer in charge may follow out the treatment of his cases without their leaving his immediate supervision, or may have them transferred to the general electro-therapeutic department. A similar arrangement is to prevail in the case of the relation with the venereal department. Facilities will also be provided for the officer to perform any operations he may desire, and he will have the services of one of the house-physicians to attend him at his ward visits and during his out-patient work. As the appointment of a special dermatologist is a new departure, the board has decided, not merely to advertise the appointment, but to put off doing so until there is reason to feel that there are one or more suitable candidates. Everyone in

connexion with the Infirmary is desirous of making the department a success, and any newcomer will be sure of a cordial welcome from his colleagues on the honorary staff.

THE CRISIS IN SHANGHAI.

THE following cable from Shanghai, received by the British Medical Association on March 31st, is, in its breathless telegraphese, more eloquent than any paraphrase or extension:

> British Medical Profession here requests your help persuade Government give no consideration Chinese assurances protect British lives property. Nationalist Army violently anti-foreign and when victorious becomes organized for plunder murder. Nationalist leaders swollenheaded by unresisted victories over Northern Army and by easy possession British concessions and property without struggle. Negotiations present time futile dangerous. Any concession regarded as signs weakness fear. Cold-blooded murder Doctor Smith Nanking and violence to women confirm opinion previously universal our only safeguard protection Navy Army against similar atrocities here.

This leaves no doubt that our brethren in Shanghai have thoroughly approved the action of the British Government in ordering out a brigade of infantry and ancillary units to reinforce the Shanghai Defence Force. In the ancillary units are included an R.A.M.C. company, a hygiene section, a sanitary section, medical mechanical transport, and a vast medical depot unit. The telegram was communicated to the press and sent at once to the Foreign Office, and the Council on April 5th directed that a telegram be sent to the profession in Shanghai informing them of the cordial sympathy of the Association and telling them what had been done.

IMPRISONMENT IN 1925-26.

THE annual report of the Prison Commissioners for 1925-26[1] contains matter of great interest in every page. Naturally certain parts—Section XIII, and Appendix No. 1, being the report of the Medical Commissioner, Dr. G. B. Griffiths, and Appendix No. 2, containing extracts from the annual reports of prison medical officers—which deal with the great problem presented by the law-breaker from the medical point of view, engage our first interest. Dr. Griffiths well describes a prison as it ought to be as "a place for hard work, discipline, and education with a view to rehabilitation on completion of sentence." When this ideal has been realized, as in time it will be, the problem must remain largely psychological as well as sociological; but to-day, as a perusal of this report shows, a considerable part still belongs to the domain of abnormal psychology. To this we return below, but first must glance at the size of the problem as revealed by official statistics. The total number of prisoners received under sentence during the year was 54,737. Truly a great number, but less by 882 than the receptions during the previous twelve months. This total, of course, does not represent the number of persons concerned, many of whom were convicted and imprisoned more than once during the year; thus, on analysis the total number of 42,844 receptions on conviction during the year represented actually 34,396 persons, the balance being caused by the repeated convictions of 6,455 persons. Nevertheless, it is gratifying to note that the decrease recorded in last year's report is continued in this, though at lessened rate. The comparative figures for the past quarter of a century, given in tabular form, are striking. The average yearly total receptions on conviction for the quinquennium ended 1903-4 amounted to 167,100; rose to 186,569 during the next five-year period; and in the five years immediately preceding the war numbered 158,782. An abrupt fall to an average of 53,068 marked the years of warfare (covered by the five years ended 1918-19), and since 1924 there has been a yearly decrease to the present figure. The Commissioners furnish a tabular comparison of the principal offences in respect of which prisoners were received in the last pre-war year, 1914, and the year under review, which shows the following remarkable decreases: Murder, manslaughter, wounding, etc., fell from 474 to 448; burglary, housebreaking, etc., from 1,960 to 1,685; larceny, embezzlement, receiving, etc., from 19,126 to 11,277; assaults from 8,666 to 3,087; drunkenness, etc., from 51,851 to 10,698; breach of police regulations from 8,661 to 1,757; prostitution from 7,952 to 1,060; and begging and sleeping out from 15,019 to 2,714; that is, the annual receptions into prisons for indictable offences have fallen since the last pre-war year from 21,560 to 13,410, and for non-indictable offences from 82,149 to 19,343. The Commissioners consider that the effects of probation, allowance of time in which to pay fines, and the operation of the Mental Deficiency Act have been the chief factors in this progressive diminution, but that industrial training during imprisonment and the increased efficiency of the agencies for the assistance of prisoners on discharge have had their effect. Of the whole number received on conviction during the year, 22,988, or 66 per cent. of the men, and 6,840, or 86 per cent. of the women, had been previously convicted, and of these 9,200 of the men and 4,583 of the women six or more times. It is again gratifying to compare these numbers with the year 1913-14, when no fewer than 28,000 men and 15,000 women had incurred six or more previous convictions. Even though the Commissioners are careful to point out that as these figures do not deal with the whole mass of recidivism in prison their value is limited, and also bearing in mind that they must be correlated with the great numbers of offenders otherwise dealt with, there seems to be room for the hopeful inference that, on the whole, we are steadily becoming a more law-abiding nation. The hope for the future lies in the increasing development of preventive measures and the treatment of the young offender. In this connexion two of many highly important matters discussed in this report may be mentioned. The first is the short sentence, which, the Commissioners again say, remains an outstanding defect in our penal system. "There is no doubt," they say, "but that the prospect of prison has a strong deterrent effect on those who have never yet passed its gates; nor that, once the disgrace of imprisonment has been incurred, much of that effect has been lost"; whilst the medical officer of Lincoln Prison says that the mere fact of committal to prison brings about a complete revolution in orientation, morally bad. The most hopeful prospect, the Commissioners say, lies in the development of the probation system, by which a point may be reached when many offenders can be so well supervised "in the open" that if they fail a period of custodial training of substantial length will be justified. The second point concerns a matter of high importance and much difficulty—the proper treatment of the mentally defective delinquent. Dr. Griffiths, in his report, refers to the application of the Mental Deficiency Act as having resulted in the permanent diminution of the prison population by a large but unknown number—possibly 200 daily; but there remains a large contingent of weak-minded habitual petty offenders who cannot be certified under the Act as it stands at present, who are unsuitably treated in prison, and who unfavourably affect the discipline, work, and training of their fellow prisoners. Medical officer after medical officer, writing with long experience of this unfortunate class of prisoner, urges the need for special provision, with due safeguards, of the indeterminate detention under non-penal conditions of these at present uncertifiable feeble-minded

[1] Report of the Commissioners of Prisons and the Directors of Convict Prisons for the year 1925-26. H.M. Stationery Office. (Pp. 83. Price 2s. 6d. net.)

offenders. To send them to the workhouse is futile, says one medical officer, and the medical officer of Holloway Prison says that if provision were made for these uncertifiable cases a large part of that establishment might be closed. They include large numbers in which the existence of mental deficiency "from an early age" cannot be proved or maintained; also cases of epilepsy and encephalitis lethargica. The need is obvious and pressing, the remedy equally obvious, and it is greatly to be hoped that if the Mental Deficiency Bill, recently introduced, becomes law, it will be found to permit the continued care and control, in non-penal institutions and colonies, of the defective prisoner who cannot be certified to-day, and whose life, spent largely between prison, workhouse, and a doubtful freedom, is a long punishment to himself, a trial to his friends and fellows, and a burden to society.

FRENCH NATIVE SCHOOLS OF MEDICINE.

THE shortage of European medical men in the oversea possessions of France has prompted the Government of that country to organize, in the colonies themselves, a staff of native assistants who are intended primarily to practise medicine among the native population. Their training for these duties is provided in native schools of medicine, of which Pondicherry, geographically situated in the presidency of Madras, is the oldest. This school confers a diploma of native health officer, which is described as equivalent to those granted by the medical schools of Madras, Calcutta, and Bombay. The number of medical students who have attended the courses since 1863 is 110, and the number of diplomas granted 65. Of the young diplomates some go into private practice; others enter the colonial service. It is now proposed to utilize them also for medical work in the French settlements of Oceania. Inoculation students and student midwives are also trained. The former are useful as vaccinators; the latter encounter some difficulty owing to questions of caste, and also because they refuse to practise abortion, but they are nevertheless making headway. The native school at Hanoi in Tongking dates from 1902. Its first head was Dr. Yersin, the discoverer of the plague bacillus. Its medical students are drawn from all the countries which constitute Indo-China. In the session of 1923-24 those who enrolled for the five years' course numbered 91. The Madagascar school is at Antananarivo. Its course is of four years' duration, preceded by two years of preliminary study. Its students are mostly Hovas. Up to 1920 diplomas as native assistant doctors had been granted to 336 students. Four diplomates have since qualified in medicine at Montpellier. One was sent to Paris to study dental surgery, and is now in practice as a dentist at Antananarivo; 208 diplomas have been issued to native midwives. The West African school is at Dakar. Its head is assisted by an advisory council presided over by the Inspector-General of Public Health. At present it has 40 students of medicine, 6 of pharmacy, 11 veterinary students, and 41 student midwives. They are drawn from Dahomey, the French Sudan, Senegal, Guinea, and the Ivory Coast. Liberians may attend, but are classed as aliens. This school is associated with an Institute of Social Health, and with the Dakar Institute of Biology, at which important work on tropical diseases is being carried on. Besides these four schools of medicine proper, subsidiary educational centres have been set up at Guadeloupe in the West Indies for midwives, and at Réunion near Madagascar for pharmacists. This record of the French native medical schools, set forth in a recent paper by the League of Nations, is one of considerable interest. Their finished product, the native health officer, though he cannot possess the experience and attainments of the graduate educated in Europe, fills nevertheless a useful place in the field of medical service. In some respects, indeed, he has special opportunities. His acquaintance with the customs and languages of the people may enable him to cope with age-long prejudices which bar the way to the European, and to diffuse some knowledge of hygienic methods of living among those with whom he has to deal. In British India, as in the French colonies, native medical assistants have done good work.

HISTORY OF THE MAYO CLINIC.

THE Mayo Clinic has been visited by so many British medical men, and is so universally known, that the *Sketch of the History of the Mayo Clinic and the Mayo Foundation*[1] will be widely welcomed. The biographical account of the Mayo family shows that it includes John Mayou (1643-1679) of Oxford, the famous physiological chemist. William Worrell Mayo (1819-1911), the father of the present famous surgeons, was born near Manchester and educated at Owens College, being a pupil of John Dalton. In 1845 he went to New York as a chemist, and, after graduating in medicine in 1854, settled the following year in Minnesota, and in 1863 moved to Rochester. A destructive cyclone in 1883 led to the establishment of a hospital, of which Dr. W. W. Mayo was in charge. Out of this grew the Mayo Clinic, which until 1900 was surgical; then Dr. H. S. Plummer organized the medical service and the *x*-ray department, and in 1905 Dr. L. B. Wilson became pathologist, and the special departments came into existence later. The figures of operations—495 in the year 1863, as compared with 23,628 in 1924—show the phenomenal growth of the activities of the famous clinic. There is a list of the medical men bearing office in the clinic. The establishment of the Mayo Foundation for Medical Education and Research and its affiliation with the University of Minnesota in 1915, which eventually involved the gift, "unique in the annals of American education," by W. and C. H. Mayo, greatly increased the facilities for graduate medical education. In 1920 the Mayo Properties Association was incorporated with the object of facilitating the use of the properties of the Mayo Clinic, which is described as "a medical democracy composed of the members of the permanent professional staff, each of whom has a vote in the management of its affairs." It is noteworthy that surplus earnings are pledged to the support of the educational and research work.

SCIENTIFIC AND INDUSTRIAL RESEARCH.

THE report of the Committee of the Privy Council for Scientific and Industrial Research for the year 1925-26[2] shows that, even in these days of economy, the Government cannot be accused of failing to support research. Estimates for expenditure, which in 1923-24 amounted to £276,863, have reached £442,877 for 1926-27. At the same time, the committee does not seem quite satisfied with the results of its efforts. It finds "some evidence that British industry has not hitherto paid sufficient attention to the need for the same accuracy of scientific control and the same spirit of research" in utilising the results of scientific inquiries in industrial production "as are expected in the laboratory. . . . The nation will not gain anything if the department publishes the results of industrial research which our friendly foreign competitors are in a better position to take advantage of than British industry." The department wisely sets out to stimulate rather than to displace private enterprise, and to promote research which

[1] *Sketch of the History of the Mayo Clinic and the Mayo Foundation.* From the Division of Publications, Mayo Clinic. Philadelphia and London: W. B. Saunders Company. 1926. (Med. 8vo, pp. x + 185; 16 illustrations, 19 charts. Price 16s.)

[2] Cmd. 2782. London: H.M. Stationery Office, 1927. 3s. net.

is practical in aim. It encourages the formation of research associations, and gives grants both to such associations and to individual workers. During the past year a research association for the preserved food industry has been formed, to work in close co-operation with the Research Association for the Cocoa, Chocolate, Sugar Confectionery, and Jam Trades. The Advisory Council of the department is of opinion that in pure science too many men are encouraged to specialize in chemistry. Of the 700 students to whom maintenance allowances have been given during the last seven years, nearly 400 were students of chemistry. The biological sciences, on the other hand, are short of investigators; and the demand for men who combine chemistry with such subjects as agriculture, biochemistry, and botany exceeds the supply. At the same time, there is little or no sign at present of atrophy of the brain of the country in pure science. In applied science the Advisory Council finds that many prominent industrial firms are rapidly developing scientific organizations; but that in the interests of the country far greater expansion is necessary, and far greater co-ordination of effort. It is thought that these aims should be achieved either by the formation of large industrial combines or by the encouragement of co-operative research amongst small independent firms. The Advisory Council holds the opinion that in certain matters research on a national basis is necessary. Thus it welcomes the recent rapid expansion of scientific research by the service departments. In other types of research the results are not only of importance to the manufacturer and the user, but are also essential to the progress of pure science. These researches, it is said, cannot be left to private initiative. They include the maintenance and improvement of standards and methods of measurement; the determination of the fundamental properties of materials, such as iron, steel, alloys, and lubricating oils; the protective qualities of materials for the safety of *x*-ray workers; the thermal properties of non-conducting materials for refrigerating plant. Finally, the department deals with researches into such matters as fuel, forest products, building construction, and the preservation and transport of foodstuffs.

PRINCIPLES UNDERLYING TUBERCULOSIS SCHEMES.

THE County Councils Association recently adopted certain resolutions with regard to the principles on which schemes of local authorities for the treatment of tuberculosis should be conducted, and a circular (No. 771) was issued by the Ministry of Health on March 31st giving the Minister's views on the various points. The circular is addressed to county boroughs, county borough councils, and tuberculosis joint committees in England. The primary duties of tuberculosis officers should, it is stated, be diagnosis, consultations with general practitioners, search for and examination of "contacts," general supervision of patients who do not require active treatment, "following up" of those who cease attendance, advisory assistance in after-care, and education of the general public. Actual treatment should be limited to patients whose treatment requires special knowledge or technical skill, and to those who are unable to obtain adequate medical attendance. The giving of medicines and cod-liver oil should be discouraged; and stress is laid in the circular on teaching patients to value advice and hygienic instruction instead of relying on drugs. Extra nourishment should not be given to those who can pay for it themselves, or to those who should be dealt with by the machinery of the Poor Law. In the Minister's opinion, the patients most suitable for extra nourishment are those who have had adequate sanatorium treatment and, with additional food, may be expected to recover full working capacity, and those waiting for admission to sanatorium treatment in whom arrest of the disease may reasonably be anticipated. While residential treatment for a short time is frequently of value in restoring working capacity to patients with slowly progressive pulmonary tuberculosis, the Minister of Health has been advised that much importance should be attached to the provision of residential treatment for advanced and acute cases. Local authorities are reminded of their compulsory powers under Section 62 of the Public Health Act, 1925, for the removal from their homes of infectious cases of pulmonary tuberculosis. They are advised also to combine the institutional treatment of surgical tuberculosis with the treatment of crippling by other diseases in children from child welfare authorities and local education authorities, in an orthopaedic hospital which may serve the areas of several authorities. Children suspected of definite tuberculosis should only be admitted to sanatoriums for a brief period of observation with a view to the establishment of a definite diagnosis. "Pre-tuberculous" children should be left to the care of the local education authorities. The points in the circular of chief interest to the medical profession are, perhaps, the emphasis laid on residential treatment for advanced cases, and the procedures mentioned as special treatment. Both points illustrate the prevailing haziness in methods of dealing with the disease. The sanatorium superintendent is anxious to fill his institution with very early cases and to show a high percentage of cures. The Minister of Health wishes to segregate late cases to prevent infection. In either case the cost of institutional treatment is prohibitive so far as dealing with all the patients in either category in this country is concerned. As for the special treatment by tuberculin, the circular gives no indication for what cases it is used, with what object in view, how far its use is general, and under what method of dosage it is given. And we are unaware of any authoritative pronouncement on these matters from any other source.

THE BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES.

THE elucidation of many problems requires a careful study of underlying principles, and speculation often paves the way for new discoveries. Both considerations are admittedly important in the advance of medical science, and therefore the letter on page 699 commending the aims of the British Institute of Philosophical Studies will have a special interest for medical practitioners. It was founded in London to bring leading exponents of the various branches of philosophy into closer contact with the general public, so that obscure issues in human life might be subjected to comprehensive consideration. Courses of lectures are delivered, tutorial classes are arranged, a quarterly philosophical journal is published, and research is encouraged. During the present session (1926-27) among the subjects under consideration are various philosophical questions, such as the relation of mind and matter; the development of philosophy since Kant; psychology, including its application to medicine, industry, and education; the world of values; and the philosophies of social life and religion. Each lecture is followed by discussion for one hour. The importance of the comprehensive view in the solution of a difficult problem needs no emphasizing at this moment, when the world is recalling with gratitude the services rendered by Lister, who by studying the process of fermentation revolutionized the practice of surgery. The medical practitioner and the student of natural philosophy are so closely akin that the present opportunity for co-operation in study cannot fail to be welcome to many; it may well prove to be fruitful in new discoveries.

THE LISTER CENTENARY CELEBRATIONS IN GLASGOW.

THE celebrations of the centenary of Lord Lister's birth, which were held at Glasgow on April 1st, were not unworthy of that great surgeon whose memory they were designed to honour, or of the town which had the singular good fortune to be the scene of his momentous discoveries. The city of Glasgow, which had already in 1908 expressed its appreciation of Lord Lister by conferring its freedom upon him, the University of Glasgow which he served with such distinction for nine eventful years, the Royal Infirmary in the wards of which his great work began, and the Established Church of the land which he adopted for a time, united with representatives of other Scottish universities, hospitals, and medical schools, with scientific and medical associations of high repute, great commercial trusts and corporations, and men of note in various departments of activity, to play their respective parts in a stately ceremonial which was aided by weather of tempered brightness appropriate to the occasion. A mild sun, warm enough to comfort, and a light breeze, sufficiently cool to promote heat-loss and stimulate metabolism, seemed to fit in well with Lord Lister's gentle spirit and keen creative mind. The season of spring, with the round of the year beginning afresh and life stirring visibly in the trees by the University where his statue is set, was aptly symbolical of his benign genius, from which, it may be said, in the world of surgery,

Magnus ab integro saeclorum nascitur ordo.

COMMEMORATIVE SERVICE IN THE CATHEDRAL.

The celebrations began with a public commemorative service held in the Cathedral of Glasgow. The representatives of public bodies assembled at 10.45 a.m., in the spacious Pathological Department of the Glasgow Royal Infirmary, and walked thence in processional order through the Infirmary by way of the South Gate to the Cathedral.

In advance of the procession went the Halberdiers of the City, followed by the Right Rev. J. D. McCallum, D.D., Moderator of the Church of Scotland, the Rev. W. M. Clow, D.D., Principal of the United Free Church College of Glasgow, and the Rev. Lauchlan MacLean Watt, D.D., Minister of Glasgow. Next came the civic mace of Glasgow and the mace of Glasgow University.

The procession in chief was headed jointly by Mr. David Mason, Lord Provost of Glasgow, and Sir Donald MacAlister, Bt., K.C.B., Principal and Vice-Chancellor of the University.

Following the Lord Provost were the Deputy Chairman of the Corporation, Councillor Stark Brown, and representative magistrates, including Bailies Mrs. Bell, Gillespie, Mrs. Barbour, Dunlop, and Archibald. Following the Principal came Sir Hector Cameron and the Court and Senate of the University. The Court was represented by Dr. David Murray, Mr. William Brodie, Dr. J. Bruce Murray, and Professor T. H. Bryce. Among members of the Senate present were Professors R. Muir (Pathology), J. Graham Kerr (Zoology), J. H. Teacher (Pathology), T. K. Monro (Medicine), W. K. Hunter (Medicine), A. Young (Surgery), P. Paterson (Surgery), E. T. Jones (Physics), J. D. Cormack (Engineering), and J. R. Currie (Dean of Medicine).

Sir Thomas Paxton and Sir W. M. Montgomery attended as ex-Lord Provosts. The Royal Faculty of Physicians and Surgeons of Glasgow, represented by Dr. R. M. Buchanan (President), Mr. G. H. Edington, Dr. Freeland Fergus, and Dr. James Adams, came next in order, succeeded by the overseas delegates, including Emeritus Professor Irving H. Cameron of Toronto and Professor F. de Quervain of Lausanne. The University of St. Andrews was represented by Professor F. J. Charteris, Edinburgh University by Professors J. Lorrain Smith and John Fraser, and the University of Aberdeen by Professor Ashley Mackintosh. Professor G. M. Robertson attended as President of the Royal College of Physicians of Edinburgh, and Dr. A. Logan Turner as President of the Royal College of Surgeons of Edinburgh.

To these succeeded the delegates of the Royal Technical College of Glasgow, the Faculty of Procurators, the Institute of Accountants and Actuaries, the Clyde Navigation Trust, the Merchants' House, the Trades House, the Chamber of Commerce, the Glasgow Parish Council, the Glasgow Education Authority, and the Royal Philosophical Society of Glasgow. Among the representatives of the press was Sir Robert Bruce of the *Glasgow Herald*.

Governors and officials of the great Glasgow hospitals came next. The Glasgow Royal Infirmary was represented by Dr. James Macfarlane, chairman, and Dr. Ian Grant; the Western Infirmary by Colonel J. A. Roxburgh, V.D., D.L., LL.D., and Colonel D. J. Mackintosh, C.B., M.V.O.; the Victoria Infirmary by Mr. William Gray, chairman; the Royal Samaritan Hospital for Women by Dr. J. Nigel Stark; the Royal Maternity Hospital by Mr. James Thomson, director; the Royal Hospital for Sick Children by Professor L. Findlay; the Glasgow Eye Infirmary by Dr. A. J. Ballantyne; and the Ear, Nose, and Throat Hospital by Dr. J. Galbraith Connal.

The hospitals were succeeded by representatives of the extramural schools of medicine in Glasgow, the Anderson College and St. Mungo's College; these were followed in their turn by the Glasgow Royal Medico-Chirurgical Society, the University Medico-Chirurgical Society, the Presidents of the Students' Representative Council, the University Union, and the University Athletic Club, and representatives of the principal medical societies in Glasgow, including Dr. W. D. Macfarlane for the Obstetrical and Gynaecological Society.

The British Medical Association was represented by Dr. George A. Allan, F.R.F.P.S.G., a member of the Central Council of the Association, and the Glasgow and West of Scotland Branch of the Association by Dr. J. P. Brown, D.S.O., President, Dr. Hill, President-Elect, and Dr. J. G. McCutcheon, Secretary.

Among others who participated in the day's proceedings were Sir John Bland-Sutton, Bt., Past President of the Royal College of Surgeons of England; Emeritus Professor Murdoch Cameron of the University of Glasgow; Mr. A. E. Maylard, lately surgeon to the Victoria Infirmary; Dr. A. S. M. Macgregor, Medical Officer of Health for Glasgow; Dr. A. K. Chalmers, lately Medical Officer; Colonel T. Kay, D.S.O., representing the Royal Army Medical Corps; Sheriff Principal A. O. M. Mackenzie; Sir John S. Samuel, K.B.E.; Sir Frederick Gardiner, K.B.E.; Sir Charles Cleland, K.B.E.; and Sir D. M. Stevenson.

The service in the Cathedral, which began at 11.15, was conducted by Dr. MacLean Watt, assisted by Dr. McCallum and Principal Clow. The congregation, in prayer, thanked God for His servant Joseph Lister, commemorating now his labours.

THE CIVIC LUNCHEON.

At one o'clock the Lord Provost and Corporation of Glasgow entertained a party of 350 persons to luncheon in the City Chambers.

Sir JOHN BLAND-SUTTON, Bt., proposed the illustrious memory of Lord Lister. He recalled that in the course of the Latin war when Aeneas was wounded in the thigh the physician Iapyx, after extracting the missile, instilled into the wound a tincture, prepared from dittany and rendered potent by Venus, which stanched the blood, relieved the pain, and restored the hero to vigour. In 1866 a patient was admitted into the Glasgow Royal Infirmary with a compound fracture of the leg. The Professor of Surgery, Joseph Lister, adopted the principles of Iapyx, but instead of tincture of dittany he instilled into the wound a solution of crude carbolic acid. The issue was successful, and it was of much importance, for it laid the foundations of the glorious edifice of antiseptic surgery. The treatment adopted by Lister in that instance was no sudden inspiration. Confronted with the endemic post-operative sepsis of these times he had come to the conclusion that infection was derived from instruments, sponges, and fingers, and had selected carbolic acid for the purpose of destroying the morbific agents. Pasteur's demonstration that putrefaction was caused by the growth of microbes in putrescible substances was a welcome confirmation of his views. As Pasteur revolutionized the winepress and the brewery, so Lister transformed the methods of operative surgery. Antisepsis in due season developed into asepsis, and the surgical shambles of 1860 were now replaced by operating rooms of spotless purity, where all concerned were clothed from nose-tip to toe-tip in sterilized linen garments, and the theatrical silence was only broken by the rhythmical breathing of the patient or an occasional utterance from a nervous operator. The end, however, was not yet. Surgery must now proceed to cure morbid growths by chemotherapy and physical agents, and

there were clear signs of the dawn of such an era. Be that as it may, Lord Lister had had the rare privilege of living to see his principles adopted by surgeons throughout the world. The bronze statue in Kelvingrove Park exemplified his steadfastness in the pursuit of truth. It was an expressive tribute to the great surgeon whose influence would remain as long as surgery was practised as an art, and the conquest of sepsis would continue to be a blessing on every race of mankind.

The toast was honoured in silence.

Dr. A. LOGAN TURNER, President of the Royal College of Surgeons of Edinburgh, proposed the toast of the Medical School of Glasgow. He said that during the two hundred years which had elapsed since the Glasgow and Edinburgh medical schools were founded there had been a number of happy interchanges of personnel, thus forging links of mutual benefit. Yet the closest bond of union was formed in the person of him whose ineffaceable memory they were met to do homage to. The same spirit which in the industrial world had given to Glasgow such proud distinction had conferred upon her medical school a foremost place in the development of medical services.

Principal Sir DONALD MACALISTER, who replied, said that he was bred to the medical profession in Cambridge and London and not in Glasgow, and so could view the medical school of Glasgow from a comparatively detached standpoint. The almost unbiased verdict was that the Glasgow school was not inferior to any in the country. With ten or eleven clinical hospitals, voluntary and municipal, at its disposal for clinical instruction, it was in that respect perhaps superior to any. Every year added to its resources in equipment and in staff, thanks to the liberality and generous devotion of Glasgow's citizens. Its motto was "Science with practice." Pasteur's science, combined with Lister's practice, had transformed the surgery of the world. The Royal Infirmary was fully re-established as a clinical school of the first order, and all mankind was united in acclaiming the birthday of the benefactor whose untiring devotion to the improvement of the surgical practice of his time, and whose unfaltering faith in science as a foundation, made the medical school of Glasgow the seed-bed of a mighty harvest for the healing of the nations.

Photograph by] *[Annan and Sons.*

THE LISTER STATUE IN KELVINGROVE PARK, GLASGOW.

Dr. R. M. BUCHANAN, President of the Royal Faculty of Physicians and Surgeons of Glasgow, proposed the toast of the Corporation of Glasgow. He referred to the part played by the magistrates and corporation of Glasgow in facing the great epidemic scourges of other days, now happily under control. The beds for infectious disease in Glasgow now were ten times the number available in Lister's time. Lister in his work observed three principles: prevention of infection, elimination of infection, should it occur, and the maintenance of the non-infected state. These same principles were applied by the corporation in the field of public health, and he expressed the hope that the results of their efforts would at no distant date be as substantial as those achieved by Lord Lister.

The LORD PROVOST, in reply, said that it was fitting that the corporation should honour the memory of Lord Lister, whose wonderful experiments, carried on in the city, had ripened into a glorious success.

CEREMONY IN KELVINGROVE PARK.

After the luncheon there was an impressive ceremony at Lord Lister's statue, an imposing seated figure on a granite pedestal, placed in Kelvingrove Park near the right bank of the River Kelvin. The rising ground behind the statue is crowned with a fringe of trees which showed a faint veil of green. Beyond the trees the high tower of the University looked down on the memorial of her world-famed teacher. The representatives of various bodies paying homage to Lord Lister's memory took up their position in front of the statue. The Lord Provost placed a wreath at the base of the statue on behalf of the corporation and citizens. Sir Donald MacAlister performed a similar office in the name of the University of Glasgow; and other wreaths were placed in position by representatives of the Royal Faculty of Physicians and Surgeons of Glasgow, the Royal Army Medical Corps, the Royal College of Surgeons of Edinburgh, the British Medical Association, the Royal Infirmary of Glasgow, the Faculty of Procurators of Glasgow, and the Royal Philosophical Society of Glasgow.

RECEPTION AT THE UNIVERSITY.

At 8.30 p.m. a reception was held in the Bute Hall of the University. The occasion was remarkable for its personal links with the memory and work of the master. Short addresses were delivered by Sir Donald MacAlister, Bt., K.C.B., Principal of the University; Sir Hector Cameron, C.B.E., sometime Lord Lister's house-surgeon in Glasgow; Sir George Beatson, K.C.B., sometime his house-surgeon in Edinburgh; Professor Irving H. Cameron, Toronto; Emeritus Professor Murdoch Cameron, sometime Lord Lister's dresser in Glasgow; and Professor Archibald Young, the Regius Professor of Surgery.

Sir DONALD MACALISTER said:

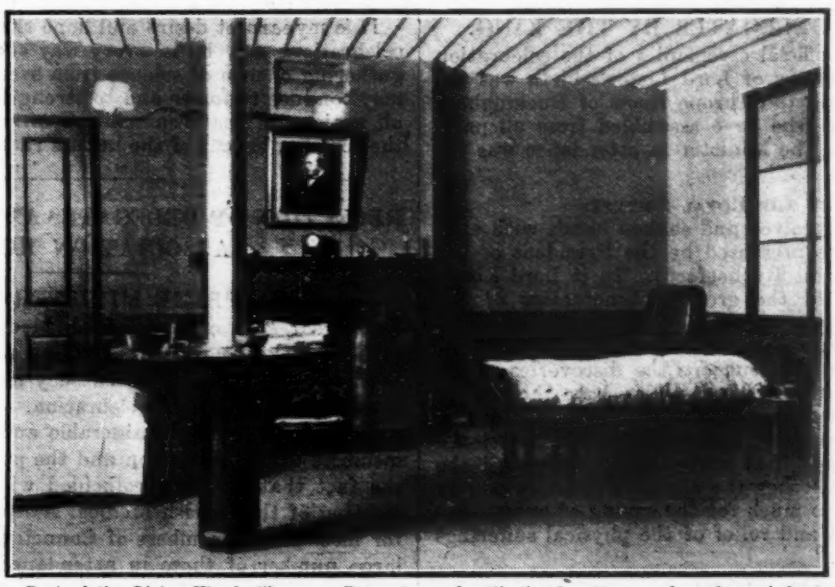
It is my privilege, in the name of the whole University, to offer a grateful welcome to the guests who to-night join with us, Lister's contemporaries and Lister's heirs, in celebrating his hundredth birthday, and, in common with the whole world, offering our tribute of blessing and honour to his venerated name. By four days we anticipate his actual centenary, but I do not apologize for that. It is fitting that Glasgow, which saw the first beginnings of his beneficent labours in the Regius Chair of Surgery and in the wards of the Royal Infirmary, should give a lead to other cities and universities in voicing his praise.

Here he sowed the rich harvest which all mankind has reaped and is still reaping. Here, in ground that was not without its storms and stones, he planted in faith the seed which has multiplied a hundredfold in every region of the earth where the art of healing is practised with knowledge. Here he elaborated with patience, and with conviction that his foundations were well and truly laid on the bedrock of scientific truth, the method of treatment which transformed surgery from a perilous adventure into a safe and saving intervention in aid of *vis medicatrix naturae*.

And note that Lister's innovation did much more than

ensure the clean healing of such wounds as accident or the merciful knife inflicted under the limitations to which surgery was then subject. He dispelled what were regarded as the inevitable dangers, not of the operating table, but of the ward set apart for recovery. He wrought hope of healing to old regions that were too often but valleys of the shadow of death. But, in addition, he opened up, like a surgical Columbus, whole continents for surgical exploration and life-saving endeavour. The surgeons of his day knew well that in the brain, in the abdominal cavity, in the limbs and joints, the seeds of death and disablement were lurking, and in due time would bear their fatal fruit. If only these weeds could be extirpated in time, life and health might still be saved. But to the pre-Listerian operator these regions were barred as by a flaming sword—the deadly sword of septic inflammation. The needful operation might be dared in half despair, but none was so bold as to promise either to himself or to his patient that recovery would ensue. Lister turned aside and quenched the flaming sword, and to-day the village doctor in the cottage home, the ship surgeon in a tossing cabin, can venture into the arcana of our frame with hope and confidence, and snatch a life from the very jaws of death.

In the weeks to come the work of Lister will be rehearsed in many lands and in many tongues. Of our guests here many will proceed to other centres to take part in these commemorative festivals, whose testimony will be borne to the vast sweep of Lister's discoveries and their influence on the relief of human suffering. These guests and delegates will be able, by reason of their own slightly ante-natal commemoration, there to testify also that in Glasgow, where Lister's revolution was cradled, the inheritors of his teaching were the first to raise the chorus of thanksgiving and veneration in this centennial year; that here, in the city of which he was a freeman and in the University in which he first held a professorial chair, his name and fame are cherished with pride and enthusiastic gratitude.



Part of the Lister Ward, Glasgow. Reconstructed with the furniture and equipment from the original ward in the Royal Infirmary, Glasgow, where Lister, in 1865, carried out his researches and first put into practice his antiseptic principles. (Wellcome Historical Medical Museum copyright.)

In the halls of the University of Glasgow are set up the memorial images of the benefactors of mankind and of human civilization whereof we make our special boast—Adam Smith, James Watt, Lord Kelvin, Lord Lister, these four: but the greatest of these, for us here and now, is Lord Lister.

Sir HECTOR CAMERON, Lord Lister's beloved disciple, who quoted from Ecclesiasticus, "Let us now praise famous men," asked what there had been in Lister's life-work and its consequences to warrant such a universal and unanimous acclaim. Had he added to the armamentarium of surgery or to its usefulness as a beneficent art? Yes, but many others had done the same. Was he a more deft operator than others? Many, he believed, were more skilful exhibitors of what he might call surgical carpentry. The reason was that by his genius he had introduced an absolutely new era of surgery, changing its character from the very bottom upwards. When, many years ago, a great French surgeon, Dr. Lucas-Championnière, stated that there were only two eras in surgery, that before Lister and that after him, everyone recognized the truth of the pronouncement. He accomplished that which all the centuries that preceded him had failed to do. Lucas-Championnière came to Glasgow in 1868 when a very young man, when Sir Hector was house-surgeon to Lister. He later became a surgeon of the old Hôtel-Dieu, and succeeded in changing the character of his wards by banishing sepsis from them. Another youthful visitor who came to Glasgow in 1869 was Dr. Warren Collins of Boston, who about two years ago wrote him of his contact with Listerian principles that "after studying medicine and surgery at the great sources for three years he had been confronted with a new doctrine which necessitated a complete revision of medical science. It had been, as it were, like suddenly stepping out through a door from an old era into a new one." Thus was the revolution seen at an early period, and recognized almost at sight, by two particularly well educated young foreigners. Since those days great progress had been made, until now the avoidance of sepsis and its consequences in all wounds was a matter fully understood by every surgeon. No human mind, however, could compute the pains which had been relieved, the lives which had been saved, or the tears which had been averted. Lister had studied sepsis before 1860, during the currency of Liebig's view which implicated the oxygen of the air. This hypothesis he could not accept, but Pasteur's researches suggested to his mind the likelihood of a microbic origin. Pasteur furnished him with the scientific clue, following which he instituted the methods of treatment which have made his name renowned. But, as Clifford Allbutt had observed, "he saw the importance of Pasteur's work because he was watching on the heights, and watching there alone." Lister reposed a steady confidence in the mind of youth. In his hours of trial, when surrounded by hostility, he felt sure that his students would carry on his principles. "I have always," he used to say, "had youth on my side." When God smote him he threw his torch to the youth of the world. The problem of cancer awaited solution. It was for youth to assail it. As they followed the quest let them emulate Lister in his truthfulness, modesty, avoidance of contention, perseverance, and patience.

Sir GEORGE T. BEATSON said that when Lister went to Edinburgh from Glasgow in 1869 he had three objects in view. The first was to perfect a simple and efficient dressing; the second, to enlarge the field of operative surgery; and the third, to convince the medical profession that his antiseptic system was sound. He found his surgical colleagues in Edinburgh as sceptical as those whom he had left behind. The *odium medicum* against him was strong among the wise men of the east, and one professor dismissed his claims with the comment that his work would be found unreliable, as he was swayed by the bias of a fixed theoretical preconception. In 1871, 1872, and 1873 Sir George worked under Lister as his dresser, clerk, and house-surgeon. He saw the gauze absorbent dressing and was familiar with the carbolized spray. Henley was in the wards during his term of office. He had lost one foot from tuberculosis and the other had been condemned. Lister operated with success, and the grateful patient enshrined his benefactor in his vivid and well known verses. Sir George Beatson recalled Lister's unflinching courage, his enthusiasm, his modesty, his unruffled temper, and his handsome, thought-lined face. He appeared to stand,

like Aaron, between the dead and the living. Through his great work the art of surgery entered on a new career.

Dr. IRVING H. CAMERON, Emeritus Professor of Surgery at the University of Toronto, stated that while his seniors had scouted antisepsis he himself had been one of its early supporters. He referred to the two visits paid by Lord Lister to Canada and the United States. He quoted a number of interesting extracts relating to Lord Lister from a Canadian medical journal.

Emeritus Professor MURDOCH CAMERON, who had been one of Lister's dressers in the Glasgow Royal Infirmary in 1867-69, described in picturesque terms the internal conditions and surroundings of the Infirmary at that time. He spoke of the ravages of typhus fever, and of knives handed direct from the sharpening stone to the surgeon. He recalled, he said, with special pleasure a letter which he had received from Lord Lister in later years, congratulating him upon his Caesarean sections, and inquiring what methods he had pursued. His reply had been, "I pursued the methods which I had learned in your wards." Lister's sympathy was wide and human, and his pity tender and true. The death of his coachman, who was killed in front of his ward, had affected him most profoundly.

Professor ARCHIBALD YOUNG, Lord Lister's successor in the Regius Chair of Surgery, proposed a vote of thanks to the previous speakers, who had helped him to see Lister plainer, and paid homage to the master and Sir Hector Cameron, his beloved disciple.

The processional and other arrangements of the day were made and supervised by Sir John S. Samuel, K.B.E., and Mr. G. H. Edington, surgeon to the Western Infirmary and lecturer in surgery at the University, who acted as joint honorary secretaries of the organizing committee, and to whom much credit was properly ascribed by all, for the precision and smoothness of the proceedings.

THE LISTER CENTENARY CELEBRATIONS IN LONDON.

RECEPTION OF DELEGATES BY THE KING.

THE first event in the official ceremonies of the celebration in London of the centenary of Lord Lister's birth was the reception by the King in the Throne Room of Buckingham Palace of the delegates who have assembled from all parts of the civilized world. The Minister in attendance was the Home Secretary.

ADDRESS BY THE ROYAL SOCIETY.

After the King had received and shaken hands with each delegate an address was presented by the President of the Royal Society (Sir Ernest Rutherford). In it Lord Lister was described as one of the greatest benefactors of the human race. His brilliant powers as an investigator and his single-minded devotion to science had enabled him, in applying to the problems of surgery the discoveries of his great contemporary Louis Pasteur, to lay bare the hidden causes of septic inflammation, and to discover means for its prevention, thereby inaugurating a new epoch in the science and practice of surgery. "It may well be doubted," the address continued, "whether the scientific activity of any one man had achieved so much for the saving of human life and for the prevention and relief of the physical sufferings which afflict mankind."

THE KING'S REPLY.

I thank you for the address which you have presented. It is with pleasure that I receive the delegates who are present here to-day, and so take part in the centenary commemoration of Lord Lister's birth. Any country might be proud to claim Lord Lister as its citizen; and I and my people heartily welcome the representatives of medical and surgical science, both from the Overseas Dominions and from all parts of the civilized world, who have come to join us in honouring his memory.

You have truly said that Lister ranks among the greatest benefactors to mankind. Of all the many changes in the last hundred years, none is more striking than the revolution in thought concerning surgery. It is hard now to realize the dread and apprehension with which formerly even a minor surgical operation was regarded. This change in our ideas is due partly to the discovery of anaesthetics and perhaps even more to Lister's work. Lister removed the horror of sepsis from surgical operations, and for this he is rightly described as the father of modern surgery. The principles discovered and laid down by him are to-day being worked out by his successors and are still fruitful of new applications.

Naturally a layman looks first at the ultimate success and beneficent effects of Lister's work. These, however, were not the outcome of happy accident or sudden inspiration, but of long and patient study, of continuous experiment, and finally of a wide knowledge and penetrating insight, enabling him to discern the importance and practical bearing of observations which, to some minds, might have remained a piece of academic research.

It is my earnest desire and hope that the Lister centenary celebrations may be in every way successful, and that this gathering of men of science from every quarter of the globe may conduce to foster and to strengthen the co-operation of all nations in the accumulation of scientific knowledge for the common benefit of the human race.

RECEPTION OF DELEGATES AT BRITISH MEDICAL ASSOCIATION HOUSE.

THE PRIME MINISTER'S TRIBUTE.

THE Great Hall of the British Medical Association House in Tavistock Square was a fitting scene for the reception by the Prime Minister on Tuesday morning of the delegates attending the Lister celebration. The official delegates themselves formed a considerable audience, but many other members of the profession and the public were present, and the fact that the date coincided with that of the Council meeting of the British Medical Association made it possible for most of the members of Council to be present. A very large number of those in attendance wore academic dress, and the costume of some of the delegates from foreign universities struck an unusual, almost a gorgeous, note.

The chair was taken by Sir ERNEST RUTHERFORD, O.M., President of the Royal Society, and chairman of the General Committee of the celebration. He was supported by Mr. Robert Hogarth, C.B.E., President of the British Medical Association, Sir John Rose Bradford, President of the Royal College of Physicians, and chairman of the executive committee in charge of the arrangements, Sir Berkeley Moynihan, President of the Royal College of Surgeons, Sir James Berry, President of the Royal Society of Medicine, Sir Charles Sherrington, Sir Humphry Rolleston, and others.

Mr. Baldwin, who was very cordially received, delivered a brief but eloquent appreciation of Lister, and afterwards shook hands with not far short of one hundred official delegates, and listened to two discourses, by a distinguished Frenchman and a distinguished German, dealing with the effect of Lister's work on surgical and pathological science and practice in their respective countries.

CHAIRMAN'S INTRODUCTION.

Sir ERNEST RUTHERFORD welcomed Mr. Baldwin, whose presence at that gathering, he said, showed that the State was not unmindful of the debt it owed to one of its greatest sons. This was a memorable occasion on which honour was being done to the memory of one of the greatest figures in the history of the application of science to surgery. It fell to few men to leave behind them, as

Lord Lister had done, such a splendid and permanent memorial of personal achievement. In the course of the celebrations some of the most distinguished men in the field of science in which Lister laboured would give appreciations of Lister's services to science and humanity. He himself had no claim to speak with authority on these matters, but it was not necessary to be a specialist to recognize what a debt the whole world owed to the discoveries of Lister and to his single-minded devotion to the cause of suffering humanity. As President of the Royal Society—an office which Lister himself filled with such distinction—he valued very highly the privilege of presiding on that occasion, and of extending a cordial welcome to the delegates who had assembled from many quarters to do honour to Lister. In addition to the addresses which would be presented formally by the delegates, some messages had come to hand from others who, by reason of distance, were not able to attend.

Those telegraphing messages of congratulation and homage included the following:

From the Imperial Academy of Tokyo,
From the State Institute of Experimental Medicine, Leningrad, and
From Semmelweis's Fatherland (sent by Dr. Emile de Grosz, President of the Hungarian Post-Graduate Committee).

MR. BALDWIN ON "A MAN OF REAL GREATNESS."

The PRIME MINISTER said:

Sir Ernest Rutherford, you have bestowed upon me a very high honour to-day in asking me to be present to receive the delegates who have come from all parts of the world to do honour to one of the greatest Englishmen of all time. In welcoming the delegates, I would say only a few words to them before I have the pleasure of receiving them personally. To-day the boundaries of all the nations are broken down in this hall. It is only fifty years ago that Joseph Lister came to London to convert his own people. It was two years after that, before he had attained that recognition here which subsequently was lavished upon him, that at an international congress in Amsterdam he was greeted by his colleagues in the profession from all over Europe in words uttered by the chairman on that occasion which we may well recall to-day: "Professor Lister, it is not only our admiration that we offer you, it is our gratitude and that of the nation to which we belong." Those are words which found their echo years afterwards, not from the lips of an Englishman, but from the lips of a great American, showing how world-wide was his constituency, when at a dinner of the Royal Society that great ambassador, Mr. Bayard, in proposing Lister's health, said: "My lord, it is not a profession, it is not a nation, it is humanity itself which with uncovered head salutes you."

I cannot think that such a gathering as this would have been possible had it not been that in Lister there were all the complementary parts that go to make a man of real greatness. There was in him that to which you can testify with more authority and with more knowledge than I. I come here to greet the memory of the great master workman in his own craft, the man who pursued his science empirically and also by applying the newly discovered knowledge of his age to practical problems, and by devoting years of his life in that pursuit—the master workman who by that work of his brought more relief, more comfort, to the human race than almost any man who has ever lived. But there is also the other side—there is the man himself. To that I think it is allowable for a statesman to pay his tribute as much as for anyone of Lister's own profession, because in him there were those very things we most admire when we see humanity raised to its highest point. There was the wonderful simplicity and integrity of his nature—a man truth-loving, truth-seeking, and truth-living, a gentle man, filled with charity and with devotion, a man with never a mean thought. These things we find allied and brought to supremacy in his own work.

I would say only this further, that no more fitting words could have been uttered of him than the words which were sung at the great memorial service in Westminster Abbey fifteen years ago, to the music of one who himself brought the nations together—the great Handel, who might be called both a German and an Englishman. The words were these:

"When the ear heard him then it blest him, and when the eye saw him it gave witness of him. He delivered the poor that cried, the fatherless, and him that had none to help him. Kindness, meekness, and comfort were on his tongue. If there was any virtue, and if there was any praise, he thought on these things. His body is buried in peace, but his name liveth for evermore." (Loud applause.)

RECEPTION OF DELEGATES.

The following delegates, representing foreign countries, overseas dominions, and British seats of learning, medical societies, and hospitals, were then presented to the Prime Minister, to whom many of them handed addresses from their respective bodies commemorative of Lister's work:

Dr. Otto Stapf (Austria), Professor A. Krogius (Finland), Dr. P. Bazy, Professor Hartmann, and Dr. P. Vallery-Radot (France), Professor von Gruber, Professor A. Kossel, and Professor Max Rubner (Germany), Professor C. F. A. Koch (Holland), Professor Johan Nicolaysen (Norway), Professor C. Kostanecki (Poland), Sir Arthur Schuster (Spain), Professor S. G. Hedin (Sweden), Professor de Quervain (Switzerland), Professor Melvin S. Henderson, Professor de Witt Lewis, and Professor W. G. Maccallum (United States).

Professor Kerr Grant and Mr. Hamilton Russell (Australia), Professor Irving Cameron and Professor S. B. Whitnall (Canada), Major-General J. B. Smith (India), Professor D. Colquhoun (New Zealand), Dr. Watkins Pitchford (South Africa).

Sir John Rose Bradford (Royal College of Physicians, London), Sir Charles Sherrington (Royal Society), Sir Berkeley Moynihan (Royal College of Surgeons of England), Professor G. M. Robertson (Royal College of Physicians, Edinburgh), Mr. Logan Turner (Royal College of Surgeons, Edinburgh), Professor Andrew Fullerton (Royal College of Surgeons in Ireland), Dr. G. H. Edington (Royal Faculty of Physicians and Surgeons of Glasgow), Sir George Newman (Royal Society of Edinburgh and Ministry of Health), Professor Graham Kerr (Royal Philosophical Society of Glasgow).

The following representatives of Universities: Sir Archibald Garrod (Oxford), Sir Humphry Rolleston (Cambridge), Professor Percy Herring (St. Andrews), Professor Archibald Young (Glasgow), Professor John Marnoch (Aberdeen), Sir Harold Stiles (Edinburgh), Sir William Taylor (Dublin), Sir Holburt Waring (London), Mr. Grey Turner (Durham), Professor Craven Moore (Manchester), Professor A. W. Sheen (Wales), Professor Leonard Gamgee (Birmingham), Professor Thelwall Thomas (Liverpool), Professor Kay Jamieson (Leeds), Professor E. Mellanby (Sheffield), Professor E. Fawcett (Bristol).

Surgeon Vice-Admiral Sir J. Chambers (Navy Medical Service), Lieut.-General Sir Matthew Fell (Army Medical Services), Air Vice-Marshal D. Munro (Royal Air Force Medical Services).

Sir Walter Morley Fletcher (Medical Research Council), Lord Somerleyton (King Edward's Hospital Fund for London), Dr. E. M. Callender (Medical Society of London), Mr. R. G. Hogarth (British Medical Association), Sir James Berry (Royal Society of Medicine), Sir Cuthbert Wallace (Association of Surgeons of Great Britain), Professor E. H. Starling (Lister Institute), Sir Frederick Andrewes (Pathological Society), Sir David Wallace (Medico-Chirurgical Society of Edinburgh), Dr. J. A. Murray (Royal Microscopical Society), Sir Frederick Fry (Merchant Taylors Company), Mr. Alfred Hepburn (Society of Apothecaries), Professor J. P. Hill (University College, London), Dr. Ernest Barker (King's College, London).

Also the following representatives of hospitals: Dr. H. Morley Fletcher (St. Bartholomew's), Mr. Charles Gibbs (Charing Cross), Mr. Walter Fedden (St. George's), Mr. F. J. Steward (Guy's), Mr. Arthur Cheatle (King's College), Professor W. Bulloch (London), Dr. C. M. Wilson (St. Mary's), Dr. E. Pearce Gould (Middlesex), Mr. Cyril Nitch (St. Thomas's), Dr. A. M. H. Gray (University College), Mr. William Turner (Westminster), Lady Barrett (London School of Medicine for Women), Dr. George Mackay (Edinburgh Royal Infirmary), Dr. W. G. Black (Glasgow Royal Infirmary), and Colonel Donald Mackintosh (Western Infirmary, Glasgow).

A FRENCH APPRECIATION.

Two discourses by eminent foreign delegates, one from France and the other from Germany, were then delivered.

Professor HENRI HARTMANN of Paris, who addressed the gathering in French, said that when the Académie de

Médecine appointed him to represent it at the centenary of Lord Lister he gladly accepted the honour because of the opportunity it gave him of expressing the homage of the French medical profession to one who had wrought a revolution in surgery. In the middle of the last century one of their greatest surgeons, Nélaton, wrote that if a man could discover a means of suppressing purulent infection he would deserve a statue of gold. Such a statue Lister had merited. Before his work all interventions with the knife were threatened by the most dangerous complications. The fear of erysipelas caused the surgeon even to refrain from incising an abscess; he preferred to await its spontaneous opening. But from the day when the ideas of Lister came into practice the aspect changed completely—interventions with the knife lost their immense risk, and surgical procedure was revolutionized.

Previous to Lister several French workers, Déclat, Lemaire, Maisonneuve, Demarquay, had been using carbolic acid in the dressing of wounds. The results obtained had been mediocre. But Joseph Lister, employing the same agent, the disinfecting action of which on sewage had already been proved, obtained results beyond anything which had been suspected, and the method as he employed it was not an empirical one, but rested upon a scientific basis.

From 1860 to 1866 Pasteur, by a series of carefully conducted experiments, had established his great work on fermentation—had shown that the various fermentations, instead of having a spontaneous generation, depended upon organisms conveyed in the air. To Lister must be given the immense credit of seeing the value of these experiments in their application to the treatment of wounds. Adopting the ideas of Pasteur, and repeating his experiments in a somewhat modified form, he came to the conclusion that the complications seen in wounds were due to infection by germs introduced in this way.

In 1867 he began the series of papers which immortalized his name. He had not simply come upon an effective disinfecting agent; he had constructed a method. He showed that to avoid wound infection the wound must be protected from the entrance of germs, that care must be taken to disinfect everything that touched the wound—the hands, the instruments, the sponges, the dressings—also that by the operation of a carbolic spray the germs in the surrounding air must as far as possible be destroyed. At the same time, he substituted for the ligatures formerly in use a new absorbent ligature, and he followed a carefully thought out practice with regard to reunion of the wound and to drainage. The results were now a matter of history. In the Glasgow Royal Infirmary the mortality following compound fractures fell on the adoption of the Lister method from 40 to 3 per cent. Erysipelas, purulent infection, septicaemia, hospital gangrene, and other complications disappeared from the wards.

An Ardent French Disciple.

A year after the publication of Lister's first paper (continued Professor Hartmann) a young hospital resident physician of Paris, Just Lucas-Championnière, visited Glasgow. He saw there, to his great astonishment, wounds healing without suppuration, reunion obtained by first intention, with a rapidity which he had not thought possible. He saw no erysipelas, no septicaemia, no purulent infection, no hospital gangrene, no suppuration even. Returning full of enthusiasm, he published, in January, 1869, the first French article on Lister's method, then unknown in most countries. Subsequently he preached Listerism and succeeded in inducing a number of surgeons to follow the practice of Lister in their hospitals. When Lucas-Championnière himself became the head of a hospital service he applied in the most exact manner the Lister method. The difference between the results of the old method and of the new was apparent to all eyes. In 1876 this disciple published his *Chirurgie antiseptique*, the first didactic work to appear on the method of Lister. Thus France was one of the countries where the method of Lister was most rapidly accepted.

Its adoption made a veritable revolution in surgery. This could be gathered from a study of the Bulletins of the Société de Chirurgie, which furnished a record of surgical progress in France. From the year 1875 the discussions differed altogether from those which had appeared previously. The procedures of surgical intervention with the knife in various directions entered upon a new phase. Surgery was wholly transformed by the safety of the Lister method. The new fields which opened out in consequence were the subject of numerous communications to the society, and the successes obtained by surgeon after surgeon appeared the more astonishing when contrasted with what had taken place before.

After recalling how Lister was acclaimed in Paris when he visited that city, and what eagerness there was to see the man who had so profoundly modified the practice of surgery, the speaker mentioned that in 1882, when he himself was a resident physician in a hospital, he made a pilgrimage to this country, as Lucas-Championnière had done fifteen years before, and saw Lister, who was then at King's College Hospital. He would ever retain the feeling of admiration which he, a young student, felt at that time for this great master.

Surgery, since Lister's discovery, had continued to evolve. Asepsis had succeeded antisepsis. For the destruction of germs by carbolic acid there had been substituted their destruction by heat, which produced an absolute sterilization, and was free from the inconveniences which attended, in certain circumstances, the contact of the antiseptic with the living tissue, and less importance was attached now than formerly to germs contained in the air. Nevertheless the principles propounded by Lister remained, a permanent acquisition.

In conclusion Professor Hartmann said:

"Aussi le nom de Lister restera-t-il dans l'histoire comme celui de l'homme de génie qui, en appliquant au traitement des plaies un méthode reposant sur un base scientifique, a permis à la chirurgie de faire, en une courte période d'années, des progrès tels qu'on n'en avait jamais vu de pareils dans les siècles antérieurs." (Loud applause.)

Listerism in Germany.

The second discourse was delivered by Professor Max Ritter von Gruber of Munich.

Professor von Gruber said that the work of Lister was a memorial which proclaimed more impressively than any other achievement the blessings of science, and disclosed to the eyes of all nations what immeasurable advantage scientific discovery and method in a humane direction could bestow upon the world. The greatest triumphs in the prevention of disease and its eradication were the introduction of vaccination by Jenner, the work done on puerperal fever by Semmelweis, and the antiseptic treatment of wounds by Lister. Lister's achievement, over and above its immediate practical utility, represented also a great gain from the point of view of intellectual development. While the first two achievements just mentioned were the result of empirical discovery, Lister's method was the result of theoretical insight following from the deductions of experimental natural philosophy. Lister's glory was also the glory of Pasteur, for Lister built his practice upon the scientific foundations which Pasteur had laid. Pasteur proved that materials liable to putrefaction never putrefied by themselves, but only when microbes multiplied in them, and that these microbes were originally introduced from without. He proved also that when materials liable to putrefaction came into contact with the air and putrefied, the cause was not the oxygen or other constituents of the air, but the germs which the air contained. These facts, established by Pasteur, convinced Lister that putrefaction in wounds was due to the entrance of germs, and that therefore it must be possible to take measures to prevent such complications. The report from Carlisle regarding the treatment of sewage by carbolic acid led Lister to employ this agent in order to cleanse the wounds of germs which might be already present and to disinfect the surrounding parts, the hands of the operator, the instruments, and the dressings. At the same time he tried to protect the wound from invasion of micro-organisms from without

by the use of special dressings. After many years of tireless work Lister perfected his method, which he thought out to the minutest details. The results of his meditations and endeavours surpassed his boldest hopes.

No doubt very few of those present had seen, as the speaker had seen, a surgical ward where the old-fashioned pre-Listerian methods were employed. Those who had not had that experience could scarcely imagine what awful things there met the eye. Only the great war brought back a resemblance to those long-forgotten horrors. In those old days nobody ever expected any large wound to heal without lengthy suppuration and copious scar-formation. So long as nothing worse than this happened the surgeon was satisfied and happy. He (Professor von Gruber) could see those patients still before his eyes, the septicaemic, the pyaemic, the tetanic, the patients with erysipelas, their heads and faces irrecognizably swollen. He could see the pads of lint dripping with pus taken out of the large caverns of the abscesses, the glowing iron by the help of which the surgeon tried to master the gangrene of the wound while sacrificing sound tissues irretrievably. And the people thus suffering were not by any means all of them old and debilitated; many were young soldiers, and not all of them had extensive lacerations of open bone fractures or other wounds which in all circumstances, and even to-day, were dangerous from the point of view of infection; most of them had been carefully operated upon. Even this was not the worst that might happen. Hospital gangrene might claim large numbers of cases. He recalled how it raged in the Munich surgical hospital in the early seventies. In 1874 no less than 80 per cent. of all those wounded or operated upon fell victims to gangrene. The smallest puncture, a corn-cut which had gone a little too deep, a cupping spot, a leech-bite, even a blister produced by a vesicant, could become gravely dangerous for limb and even for life. Out of sixteen amputation cases eleven died of pyaemia. And yet in that very same hospital Professor von Nussbaum could show his students, one day in 1875, but a few weeks after he had begun to "lister," as they said in Germany, that at the moment there was not one new case of pyaemia or of gangrene there, but that all the wounds were healing faultlessly and quickly.

The Slow Progress of Lister's Method.

Perhaps the present audience (Professor von Gruber continued) might be surprised to hear that in 1874, seven years after Lister's first publication, his method was not employed everywhere in Germany. But even in Great Britain things were not very different. That many years had to elapse before Lister's discovery came to be universally put into practice was not to be attributed merely to human blindness in the face of all that was new, or to vanity and jealousy of colleagues; there were more substantial reasons. The corroboration by microscopical or cultural proof of Lister's teaching as to certain micro-organisms being the cause of wound infections was not forthcoming for a long time. A still greater hindrance was the fact that Lister's method as first published was not the fully developed method; it was improved and developed by Lister himself when he brought forward his so-called permanent dressing in 1871. The subtle manipulations which his method required had to be learned most exactly and carried out most punctiliously, for defective execution brought many failures. The procedure was also very expensive. The use of concentrated solutions of carbolic acid produced severe poisoning, and even the inevitable breathing in the carbolic vapour was dangerous. For all these reasons the new treatment of wounds only slowly won its way.

Some prominent German surgeons were among the first to appreciate the greatness of Lister's invention. In 1871 Surgeon Major A. W. Schultze visited Lister in Edinburgh to learn his method at first hand, and in the following year, in the *Deutsche militärärztliche Zeitschrift*, he reported what he had seen there. It was the first time that exact details about the new treatment were made known in Germany. Professor v. Bardeleben, in Berlin, and Professor Volkmann, in Halle, were the first to begin at once to treat according to Lister's prescriptions. The latter in 1871 had been so distressed by the cases he had seen in his own hospital that in despair he was considering closing his hospital altogether. Professor von Nussbaum was the third clinician to take up the method after his assistant Lindpaintner had been Lister's scholar in Edinburgh.

The town from which the speaker came, Munich, was the first to proclaim the immortal glory of Lister. He was received there in 1875, and reverence was paid to him then as one of the greatest benefactors of mankind.

The Triumphal March of Listerian Surgery.

It would be erroneous to suppose that previous to Lister no means of preventing these wound infections was known. When he himself was a student in Billroth's clinics in Vienna the so-called "open-wound treatment" by Weber and Billroth was practised for years, and worked excellently in the treatment of such operations as could be ventured in those days. It was in itself a kind of antiseptic method. But what did the boldest surgeon venture at that time? To-day the great probability—almost the certainty—of avoiding wound infection by careful operation had opened fields to surgery which were undreamed of fifty years ago. Under Lister's banner surgery began an incomparable triumphal march, and greater conquests were made in two decades than had been made in two millenniums before. True, many of the original precautions practised by Lister in the treatment of fresh wounds had proved to be superfluous. Infection from the dust in the air was not so greatly feared, and the aseptic method, which avoided as far as possible the contact of the wound with chemicals, had been substituted for the antiseptic. But the principles of Lister remained unshaken. His discovery was and would be the ground-work of all wound treatment. It was also of great biological importance. Formerly the living organism had seemed to be a very frail structure, its organs extremely susceptible to mechanical disturbance. Only after Lister's work did it become evident to what an astonishing extent the organism reacted in the direction of the preservation of life, and how capable it was of regeneration.

In conclusion, Professor von Gruber said that thirty years ago he had the fortune to enjoy close intercourse with Lord Lister for some days. The thought that he had been of use to mankind was the greatest happiness of Lister's life. The beauty and nobleness of his appearance were in complete accord with the harmony and magnanimity of his character. The tender glance of his blue eyes was not to be forgotten by any who met it. Lister was one of the most glorious blossoms the tree of mankind had ever borne. He believed, and worked in the belief, that there was no more sublime aim for human striving than to discover ways and means to diminish the sum of sufferings and augment the joys of mankind. Very often when they felt driven to despair in the face of human vileness the memory of Lister came before the mind as a shield from pessimism. The thought of this great and pure soul would always make them hope anew. (Loud applause.)

VOTES OF THANKS.

Sir ERNEST RUTHERFORD, in thanking the Prime Minister, said that he did not know whether Mr. Baldwin ever met Lord Lister, but he was sure they would have delighted in one another's company. He also thanked the two speakers. All those present were sensible of the great debt which the whole world, and Lister himself, owed to the great Frenchman Pasteur. Lister knew that his own work rested on the pioneer experiments of Pasteur on fermentation. They also appreciated the debt that admirers of Lister owed to Germany and to France for the way in which those countries took up at an early date Lister's discoveries. Further, he had to thank Mr. Hogarth, as President of the British Medical Association, for lending the beautiful and appropriate hall of the Association for the ceremony.

MEMORIAL MEETING AT KING'S COLLEGE HOSPITAL.

Tributes by Former Pupils.

The Listerian Society at King's College Hospital, London, of which Lister was President in 1877, just fifty years ago, celebrated the centenary at a large meeting on Monday afternoon, when addresses were given by Sir W. Watson Cheyne, Bt., and eight or nine others who had been closely associated with Lister, especially during the years at King's College. The chair was taken by Mr. Arthur Cheatle, president of the society, who said that King's College Hospital kept that day with gratitude and pride—gratitude that such a man as Lister was ever born into the world, and pride because he was a fellow-countryman and closely attached to the hospital as surgeon and consulting surgeon for thirty-five years. To help them celebrate their centenary they welcomed Sir Watson Cheyne, Lister's chief apostle and a "King's" man.

Sir Watson Cheyne spoke of Lister as a man rather than as a scientist. Fifty years ago Lister received an urgent invitation from the authorities of King's College Hospital, then in the vicinity of Lincoln's Inn Fields, to come to London to fill the place in that hospital vacant by the death of Sir William Fergusson in the preceding year. The request came as a thunderbolt to Lister. He had settled down in Edinburgh, and was supremely happy there, where he had friends who loved and admired him, and where he had very large classes of enthusiastic students whom it was his joy to teach. At first he declined the proposal, but renewed requests were made, and he ultimately agreed to come to London, being chiefly influenced by the argument that his views and methods of treatment would spread more quickly from the metropolis than from Edinburgh, and by the fact that, although eleven years had elapsed since his first publications, really very few surgeons in London had taken up his methods. Before Lister made his final decision he came to the Infirmary early one morning and woke up his house-surgeon (the present speaker) to ask him whether he would go to London with him. Three other students were also asked to go as clerk and dressers, and the four of them were naturally very much excited and pleased at the prospect of following the master. They felt very much as the old crusaders must have felt. In London Lister missed sorely the numbers of students who followed him and filled the lecture room at Edinburgh. When the students at King's, at that time quite a small school, attended his lectures in small numbers and looked bored, he was very pessimistic, and for some years the speaker tried to attend his lectures whenever he could manage to do so because he knew how much the presence of senior men pleased and comforted him. For some time it appeared as if they had struck a poor type of student at King's, but later it was discovered that the examining bodies did not favour "Listerism," and that the students were afraid to introduce the subject, desiring, in fact, not to learn Lister's views until they had passed their examinations. One of the greatest characteristics of Lister was his extreme conscientiousness. His care in his papers and addresses to ensure as great accuracy as possible had the curious result that when he had to deliver any important address he was almost certain to arrive late at the meeting, the explanation being that, on going over the points of his discourse before leaving home, something had occurred to him as not sufficiently proven to justify a positive statement, and he would, even at the last moment, set to work to look into the matter. When about to deliver before the Royal Society the Croonian Oration on the coagulation of blood, it was said that a point struck him after he had left his house, and he turned into a slaughterhouse and had an animal bled in order that he might make the necessary observation. His conscientiousness was shown also with his patients. If they complained of pain or discomfort he would set to work to rearrange dressings, splints, and pillows, irrespective of other engagements, thereby making himself late for appointments. For this reason—the likelihood of appointments with busy practitioners not being punctually kept by him—he never had a large private practice. When asked to give an opinion in a case on which he was not himself to operate he was troubled a great deal. In many cases the opinion that he felt to be the correct one might depend entirely on whether the wound would remain aseptic or not. If he advised an operation in which asepsis was essential, and the operation was not done by him, or by someone who believed in and practised asepsis, his opinion, if acted on, might practically condemn the patient to death. In this transition period, therefore, he quite rightly looked on an opinion given by a surgeon as applying only to his own handling of the case afterwards, and he was very much against those who gave advice after they had ceased to operate. The speaker also mentioned Lister's sympathy with sufferers, and his readiness to help, sometimes much abused. In spite of numerous ovations, Lister remained throughout life a humble and unaffected man. He appreciated all his honours, but they made no difference in his relations with other people, nor did he show that he was conscious of meriting any special respect.

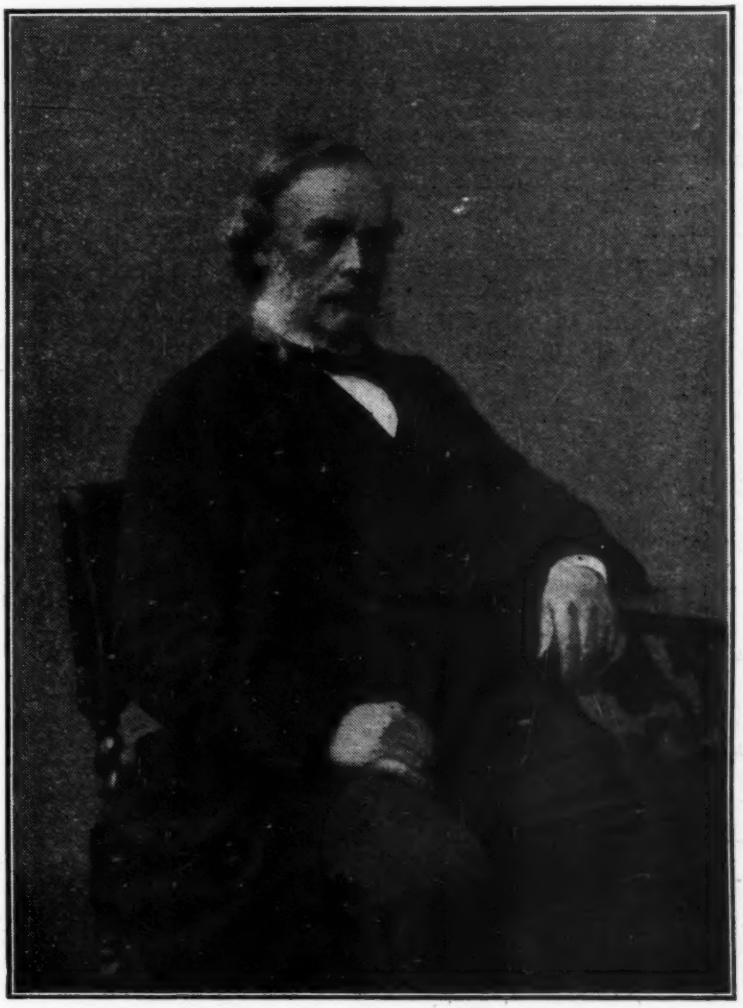
Sir George Lenthal Cheatle said that Lister was in every way the greatest man he had met. Lister's devotion to his work and his great courtesy had caused all who had come in contact with him to revere him. To Lister the hospital was a temple, and he would endure no infringement of its sanctity. On one occasion he performed a brilliant operation in thirty-two seconds, and when the onlookers cheered him he turned round and said, "Gentlemen, remember where you are." Lister would not tolerate inefficiency, and had never made an inaccurate statement. On one occasion he told the speaker that he did not wish to retract anything he had said or written. The legacy which Lister had left to mankind would be everlasting. Those of his fellow-men who had felt his personal influence knew that the place filled at his birth and left vacant at his death could never be filled by anyone else.

Colonel Bond told many personal reminiscences of Lister, and gave instances of how he had benefited by having learned at his feet. He recalled how at the Medical Congress of 1881 well known surgeons from all parts of the world had come to listen to Lister, and described how, by the use of Lister's methods, Sir Thomas Crawford and himself had saved numbers of cases in the Egyptian campaign and the Boer war which otherwise would have surely proved fatal. No proof was needed of the boon and blessing which Lister had been to surgery.

Sir StClair Thomson said the "old antiques" on the platform could go back to the time when most of the hospitals in the country reeked with the stench of putrefaction, and he himself could remember when he had been temporary house-surgeon at King's Lynn, at which time the only operations carried out there had been amputations, and underneath each stump used to be placed a tin tray to collect the dripping pus. The wounds were dressed with oakum, and from the gaping wound there used to hang the hemp ligatures, used before the days of catgut. Those who came in contact with Lister for ever remembered his magical influence and extreme modesty. Like all great men, Lister was very particular about details. He used to show students how, in bandaging a chest, the turns of the bandage above and below the breast had to be fixed with a safety-pin; otherwise they drifted apart, and, in order to impress that upon his hearers, he used to tell the incident of how he had had on one occasion to open an abscess in the axilla for Queen Victoria. All had gone well, but on reaching the railway station to go home he suddenly remembered that he had forgotten the safety-pin. He immediately returned to Balmoral Castle, and explained the oversight to Queen Victoria and the necessity for making her undress so that he might put in the safety-pin. Some surgeons would perhaps have chanced that safety pin.

Mr. R. Hamilton Russell, F.R.C.S. (Melbourne), remarked that Lister appeared to one in various guises—first, as an operating surgeon, secondly, as a most delightfully lucid lecturer, and thirdly, and greatest of all, as supreme and without rival as a dresser of wounds at the bedside. He had been putting together a short time ago a few reminiscences for the Edinburgh Memorial Volume, and it had occurred to him to estimate what

proportion of Lister's teachings to his students had consisted of the art of dressing wounds; he had come to the conclusion that, on a rough calculation, 75 per cent. of Lister's teaching had been devoted to that art, and 25 per cent. to what might be called ordinary textbook surgery. It was very rarely nowadays that the Lister anaesthesia was referred to; it had been a side-interest of Lister's, which had been completely obliterated by the greatness of his supreme achievement. Nevertheless, Lister had been a great scientific experimenter in anaesthetization; he had written in Holmes's *System of Surgery*, 1883, the best articles on the practical administration of chloroform that had ever been published. Sir Watson Cheyne had put the question, In what did the genius of a man like Lister consist? It was exceedingly difficult to answer such a question, but whenever one met a man with superlative ability of intellect or nobility of spirit, or both combined, as in the case of Lister, one was certain to experience extraordinary interest and great moments. In reply to a compliment, Lister had once said, "Yes, that is a thing which will rejoice the heart of any man who loves his fellow-men," and he had never known any man other than Lister who could have said that and have conveyed conviction of the genuineness of his feelings on the subject. Lister had really loved his fellow-men; he had had, in fact, the philanthropic temperament. He was a great lover of children. At a clinical lecture Lister was once discussing the treatment of the patient, who happened to be a little child, and he said, "We must always remember that when the patient is a child it adds to our responsibilities. An adult is able to decline any treatment suggested, and the patient, therefore, in that case can share the responsibility with the surgeon; but in the case of a little child it is absolutely at our mercy, and that should make us all the more cautious about anything we undertake to do to their sacred little bodies."



Dr. H. P. WARD said he well remembered his first impression of Lister's outstanding personality, and his fine physique and noble physiognomy. All knew what strength he could exert if necessary, and his powers of endurance. When one studied his features, who could doubt that there was intellect above the average? His strength of mind and purpose was indicated by his noble spreading forehead, his deep clear eyes, and thoughtful but benign expression of countenance. Work had been Lister's life occupation —work done with the noblest of all objects, namely, the relief of human suffering. To his example and teaching of truth and sincerity and the sacredness of human life, his kindness and consideration to all his patients, his hard work and attention to detail, those who were his pupils owed whatever of those excellent qualities they had exhibited during their professional careers. He for one looked back on his years of guidance under Lister as his most precious years of experience, and he voiced his sincere gratitude to his teaching and influence.

Mr. L. V. CARGILL called to mind Lister's noble presence, his quiet dignity, and his earnest teaching and constant example, which created amongst those who worked with him an atmosphere which brought out one's best efforts to attain the sort of standard and high ideals and unstinted service which Lister would wish. Remarks had been made about examination and teaching. He could recall how Lister used to regret the time which men seemed to find it necessary to give to that form of teaching which was specially adapted for the examination room. The teaching that Lister gave was of a kind which was of the greatest use to his pupils, not perhaps for the mere purpose of examination, but for the purposes of life after the examination was concluded. Lister reminded him of Shakespeare's lines:

> "What a piece of work is man! How noble in reason! how infinite in faculties! in form and moving, how express and admirable! in action, how like an angel! in apprehension, how like a god!"

Dr. H. DISTIN described how being attached to Lister used to have its drawbacks. His fellow-students used to say that if one dressed for Lister one never learned anything, because he did not teach one any surgery; that whereas the other surgeons in the hospital did brilliant operations, Lister's cases were all chronic patients whom he kept in the ward for six or nine months. Time had proved that such scepticism of Lister's principles had been wrong, and no one would say now that Lister had not taught surgery. It had certainly been trying for anyone attached to Lister to have to go round the wards with him accompanied by only the dressers while other surgeons were accompanied by crowds of students. But besides his dressers Lister used to be accompanied by numbers of German and French doctors, who treated Lister as a sort of god. The dressers used to have to listen to long dissertations in French and German by Lister, and as few of the students understood a word of it that was probably one reason for the prevailing unpopularity of serving with Lister. Lister had taken a long time to become popular owing, among other reasons, to the ultra-conservatism of the London surgeons, who could never learn anything from the provinces or other places. An incident which showed Lister's strength of character was as follows. The anti-vivisectionists of the day had induced Queen Victoria to instruct her secretary to write to Lister asking him to denounce vivisection. If anyone desired to read Lister's courageous reply they could do so in Sir Rickman Godlee's *Life of Lister*, where they would see how he had said that he would be lacking in his duty to humanity if he protested against animals being experimented on. When it came to a question of conviction Lister was no courtier, and he had simply told Queen Victoria that he would not

do what she asked him to do. Just as the history of England was written in two parts—the nebulous part prior to the Norman conquest, and the more precise part since, so the history of British surgery would be divided into two parts—the pre-Listerian era and the period subsequent to that time.

Dr. H. PERRY paid a tribute to Lister's outstanding charm of personality. He was a man of very deep religious convictions, but absolutely free from any form of bigotry. He had said on one occasion that if a man did his duty on this earth he had nothing to fear elsewhere. He was a brave man, but infinitely cautious, studying a major operation as though he had never done such an operation before. Personally he sometimes wondered whether Lister's personality was not even greater than his vast achievements.

Dr. A. BOUSFIELD said he had come in contact with Lister at the very end of his active hospital career, but his interest in every detail of his cases had not abated in the very least on the last day he went round the wards.

The CHAIRMAN, before closing the meeting, announced that he held in his hand a unique record of Lister—namely, an *x*-ray picture of Lister's hand. It was the most intimate relic existing of Lister.

UNIVERSITY COLLEGE HOSPITAL.

Two laurel wreaths were placed over the Lister memorial tablet at the main entrance of University College Hospital on the morning of April 5th, as tributes from the general committee and the Medical Society. Sir ERNEST HATCH, chairman of the hospital, who presided over the ceremony, gave a short account of Lister's connexion with the hospital, which he entered in 1844. Five years later he was appointed house-physician, and the year 1851, when he became house-surgeon, brought with it the fulfilment of the desire Lister had expressed in boyhood—namely, that he wanted to be a surgeon. He published two important papers in early life; one was written in the hospital in 1853, and received high commendation by distinguished authorities. The first operation in London under an anaesthetic was performed by Robert Liston, another member of University College Hospital, and Lister was invited to be present. Soon after this he left the hospital to pursue his life's ambition in Edinburgh, and, later, in Glasgow. Sir Ernest Hatch added that while Lister was at University College Hospital he had the good fortune to be instructed by Wharton Jones, professor of surgery, and William Sharpey, professor of physiology, the former of whom was then making his celebrated investigations into the circulation of the blood and the phenomenon of inflammation. Sir Ernest Hatch expressed his belief that these two great professors were the presiding geniuses over Lister's early career and the inspirers of his subsequent triumph.

ROYAL SOCIETY OF MEDICINE.

A SOCIAL evening was held at the Royal Society of Medicine in connexion with the Lister centenary, when the numerous guests were received by the President and Lady Berry. Relatives of Lister were present, and delegates from the United States and Continental countries. Sir STCLAIR THOMSON delivered an eloquent address based on his recollections of his experience as one of Lister's house-surgeons. This address, which is published at page 659, was illustrated by a series of photographs of Lister at different ages, and of some of the institutions where he worked, a pleasant feature being the careful arrangement by which demonstration of the lantern slides did not interrupt the speech, but served to illustrate its cardinal points. Various exhibits lent by the Wellcome Historical Medical Museum were on view in the library.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A CONVERSAZIONE given by the Royal College of Surgeons of England at Lincoln's Inn Fields on the afternoon of April 5th was largely attended. Among the guests were a number of delegates who had been presented to the Prime Minister in the morning. Besides the library and the portraits and busts which much interested the visitors, the collection of instruments once belonging to Lister, and of his letters and notebooks and other documents, attracted a crowd of surgeons and their friends. The instruments are referred to in some detail in another part of this issue (p. 675).

MERCHANT TAYLORS' COMPANY.

IN 1903 the Merchant Taylors' Company, the successor of the Guild of Merchant Taylors of the Fraternity of St. John the Baptist in the City of London, admitted Lord Lister to its honorary freedom, in recognition of the long and valuable services rendered by him to the country, and particularly to surgery, by the discovery and application of the antiseptic treatment. It was appropriate, therefore, that the Company should take a share in the celebrations of this week. On Tuesday evening it entertained a large company to dinner in its beautiful hall, which still stands on the site in Threadneedle Street which the Guild acquired in 1347. After the Master, Mr. A. L. F. Cook, had given the loyal toasts, he proposed the health of the Lord Mayor, Sir Rowland Blades, Bt., M.P., who, in replying, spoke warmly and with knowledge of the great services Lister had rendered to surgery. The "Memory of Lord Lister," briefly proposed by the Master, was drunk in silence. The Earl of Crawford and Balcarres, K.T., F.R.S., then proposed the toast of "The Delegates," who, he said, had come from all parts of the world to recognize Lister's great work in physiology and pathology. Within the lifetime of many of them, he continued, there had been very great progress, both in medical science and the philosophy of the hospital. All present were proud to belong to an age which had witnessed marvels in the relief of human suffering and their diffusion throughout the world. Speaking for the public, he would say that it wished the surgeons, physicians, and pathologists who were concerned in that progress all success in the future. The toast was acknowledged by Professor J. Nicolaysen of Oslo (Norway), who, after some general observations, said that Lister's methods had been an inspiration to all in all countries and had stood the test of the war. Dr. Irving H. Cameron, Emeritus Professor of Surgery in the University of Toronto, also responded; he said that the cogency of Lister's observations and the theory founded upon them had received early recognition in Canada. Finally, Sir John Rose Bradford, President of the Royal College of Physicians of London, and chairman of the executive committee by which the arrangements for the celebration had been so well made, proposed the toast of "The Master." The occasion, he said, had received recognition at all hands: first by the King, who had received the delegates on Monday morning; then, that morning, by the large medical audience which assembled in the Hall of the British Medical Association to witness the reception of the delegates by the Prime Minister; and next by the chief magistrate of the City of London, who had addressed the company that evening in the ancient and beautiful hall of one of the oldest and greatest of the city companies. The Master, in a brief reply, expressed his own pleasure and that of the Company he represented in being able to pay a tribute to Lord Lister, who had been one of its most distinguished members. Among the company, in addition to those whose names have been mentioned above, were many representatives of science, medicine, and literature, including, in addition to the foreign delegates, the Minister of Health (Mr. Neville Chamberlain), the President of the Royal Society (Sir E. Rutherford, O.M.), the President of the British Medical Association, Sir Watson Cheyne, Sir Berkeley Moynihan, Dr. Andrew Fullerton (President of the Royal College of Surgeons in Ireland), Sir Arthur Keith, Sir George Makins, Sir Charles Sherrington, Sir Walter Fletcher, Professor G. M. Robertson (President of the Royal College of Physicians, Edinburgh), Dr. R. M. Buchanan (President of the Royal Faculty of Physicians and Surgeons of Glasgow), Sir William Taylor (Dublin), the Bishop of Birmingham, the Lord Provost of Glasgow, Sir Edward Gosse, Sir George Frampton, R.A., Professor E. H.

Starling, Sir R. Havelock Charles, Major-General J. B. Smith (I.M.S.), Sir David Prain (Treasurer of the Royal Society), Sir Richard Gregory (editor of *Nature*), Sir James Berry (President of the Royal Society of Medicine), Sir Thomas Barlow, Bt., M.D., Professor J. Marnoch (Aberdeen), Professor A. W. Sheen (Cardiff), Sir George Newman, and Professor Elliot Smith.

MEMORIAL SERVICE IN WESTMINSTER ABBEY.

ADDRESS BY THE BISHOP OF BIRMINGHAM.

THE memorial service in Westminster Abbey on Wednesday morning, at which an address was given by the Lord Bishop of Birmingham (Right Rev. E. W. Barnes, F.R.S.) was attended by the official delegates, most of whom wore academic costume and were accommodated in the nave, and the rest of the building was filled in every part by members of the general public. Viscount Hampden attended as the representative of H.M. the King.

The service included Handel's anthem, "When the ear heard him," which had been rendered fifteen years previously on the occasion of Lister's funeral. The Prime Minister had quoted the words of this anthem in his speech on the previous day. A special collect was said for the Presidents, Councils, and Fellows of the Royal Societies, and the lesson, read by the Dean of Westminster, was from St. Luke ix, 19-23, in which is described Christ's commendation of His miracles of healing to John the Baptist as evidence of His divine mission.

The BISHOP OF BIRMINGHAM said that they had met in the Abbey, where but for his own desire Lister might have been buried, to give thanks to God for the benefit which this great surgeon had conferred upon humanity. That was not the occasion on which to discuss the technical aspects of his discoveries or to delimit the range of his genius. Such a task was more rightly undertaken by members of Lister's own profession. He was more concerned to commemorate the personal qualities of the man, the religious principles which fortified his character and guided his actions, the patient enthusiasm which served his genius, and especially the inestimable value to humanity of his life-work.

The steady persistence with which Lister pursued a single great aim throughout his career was remarkable. As a medical student at University College, London, he read a paper on hospital gangrene; and at the end of his professional life he was still endeavouring to perfect the details of the great aseptic method of treatment which had revolutionized modern surgery. Lesser men might have been intoxicated by fame, but Lister preserved a humility which was singularly attractive; he sought truth patiently; he was ever willing to examine the new theories and methods which might lead him to modify his earlier conclusions; he had, in a word, the true scientific spirit, and with it the insight of genius. Whence came his quiet pertinacity, his steady trustworthiness? He owed much to his Quaker ancestry. It was not fanciful to see in the practical ability of his father and the gifted imagination of his mother the sources of some of his own remarkable qualities. In his early home life, with its traditions of self-discipline and high endeavour, there were influences which made his character the worthy servant of his mental gifts. He combined piety, gravity, reverence, and hopefulness; he was pure-minded and conscientious, convinced of the power of goodness, and a loyal servant of truth; and he who could show such qualities and preserve such an attitude of mind was not far from the Kingdom of God.

The preacher then passed in brief review the principal features of Lister's career, touching also upon the discovery of chloroform by Simpson. Even after Simpson the operation table remained as dangerous as the field of battle until Lister worked out his great discovery. He was led to his experimental use of carbolic acid as a dressing for wounds by a study of Pasteur's work. To praise Lister was in no respect to belittle Pasteur. By 1865 the idea of antiseptic treatment seemed to have shaped itself in Lister's mind. The scientific principle which guided him was of transcendent importance. The chemical substances he used were but a means to an end, and had now to some extent gone out of use; but the change from antisepsis to asepsis was an improvement in technique rather than an alteration in principle. From Germany, subsequent to the Franco-Prussian war, came a new type of hospital cleanliness and method which made its way to England, and when it arrived in this country there were some who, eagerly embracing the new methods, excused their indifference to Lister's teaching by proclaiming the inferiority of antisepsis to asepsis. But on the Continent the leaders of medical thought and progress had no hesitation in assigning to Lister the praises which he merited. London was for a time apathetic. Once again it appeared that a prophet was not without honour save in his own country. But after the triumphant welcome and enthusiastic homage which Lister received in 1879 at the International Medical Congress in Amsterdam his fame was secure. Thenceforth to disparage Lister or to belittle his achievements was to confess oneself prejudiced and ignorant. Of the new era Lister was hero and pioneer. It might with truth be said that he made surgery safe for humanity. Henceforth he was to receive almost every honour the gratitude of society or the esteem of men of science could confer.

"When we think of such a discovery as we associate with the name of Lister," said Dr. Barnes in conclusion, "we wonder how many more such discoveries shall yet be made by humanity. Thanks to Lister, the surgeon and the physiologist can now work hand in hand. The origin of pathological changes can be investigated. Shall we in the end discover how we may prevent the onset of disease? The question cannot be answered, but we need not hesitate to affirm that man's future triumphs in the war against disease will surpass the victories already won. Sometimes when we speculate on the future of humanity we think of the highly evolved forms of life that lorded this earth in past ages and disappeared. Why did they disappear? Probably, I suppose, minute organisms swept them away. Either the virulence of such organisms increased, or the animals attacked lost their power of resistance. Is such an end to be the fate of humanity? Many a zoologist would say so. Yet man differs from all other animals that have come from earth's teeming womb in the characteristic development of the powers of his mind, in some quality of personality and survival value different from that of the lower animals. Is it possible that by virtue of those same mental powers with which he is endowed man will in the end conquer disease and pain, and thus prepare the way for the Kingdom of God upon earth? Will physical and moral victories combine to make human life nearer to human hopes and dreams? None can say. We build for an unknown future. Yet the achievements of the leaders of human progress give substance to our hopes. We thank God for the master builders whom He raises up. We believe that there is something in their work which will never perish. To-day we thank God for Lister, for the relief from pain and disease which he brought to mankind; and no less do we give thanks for his single-minded devotion to science, which will inspire others following his work for the welfare of the human race." After the sermon the choir and congregation joined with fervour in the hymn "Now thank we all our God," the English version of Martin Rinckart's fine song of praise.

Although it was not found possible to arrange for the Council of the British Medical Association to attend the Abbey as a body, the President, Mr. R. G. Hogarth, was present as representative of the Association, and some other members of Council attended in their individual capacities. On behalf of the Association Mr. Hogarth placed a beautiful wreath beneath the medallion of Lister.

LISTER MEETING OF THE ROYAL SOCIETY.

THE THREE DISCOURSES.

THE Barnes Hall of the Royal Society of Medicine was crowded by the Fellows of the Royal Society and their friends, who met together on Wednesday afternoon to listen to the three discourses with which this issue opens. No orators could have been selected so well fitted—none certainly more fitted—for the tasks assigned to them. It would be difficult to ascribe to any one of the three

ascendancy over his fellow speakers. The discourses of Sir Charles Sherrington and Professor Bulloch were both of great literary merit as well as of high scientific value, and Sir Berkeley Moynihan concluded his discourse with a peroration couched in beautiful English and inspired by the brightest hopes for the future of medicine and surgery.

The President of the Royal Society, Sir Ernest Rutherford, in introducing the speakers, said that he would point out, and indeed emphasize, that Lister's establishment of antiseptic surgery was one of the most striking examples of the power of the scientific methods in advancing knowledge and also one of the most useful illustrations of the mental and moral qualities required to wrest secrets from nature. Professor Nicolaysen, on the previous evening, had said that the idea on which Lister worked did not in a sense come as a haphazard inspiration. Lister, even in his undergraduate days, had been greatly interested in the subject of hospital gangrene, and later, when he became professor of surgery, he continued to give a great deal of time and thought to experiment on the problem that impressed him—namely, inflammation and suppuration and the methods of controlling them. After many years of patient thought and experiment there came the illuminating results. Starting from Pasteur's work on micro-organisms as the cause of fermentation, Lister at once saw the possibility of the theory that the cause of suppuration was the introduction of some unknown micro-organism, and guided by that idea he subsequently developed his wonderful method. While he continued his investigations to prove the truth of this hypothesis he at the same time developed the technical methods to ensure success. In Lister there was the most unusual combination of a man of philosophic outlook endowed with great power of experiment and having the direct command of technique which was essential if his method was to be successful.

At the end of the discourses Sir Ernest Rutherford said that, like himself, the audience, he felt sure, had never passed a more interesting and enthralling afternoon. He thanked Sir Charles Sherrington, a great leader in physiology, for his address. The audience had been fortunate, too, in having Professor Bulloch, who knew Lister well owing to the position he held at the Lister Institute in the early days; the audience were grateful for the way in which he had treated the subject. What, he asked, could he say of Sir Berkeley Moynihan, of his eloquent address, and of the great knowledge he displayed of the possibilities and limitations of the art in which he excelled so much? On behalf of all present he desired to thank the three orators for their addresses.

THE ROYAL SOCIETY'S CONVERSAZIONE.

THE Royal Society held a conversazione on Wednesday evening (April 6th), which was attended by a very large number of guests, who had an opportunity of seeing many things of interest, old and new, for the Society displayed a selection from its muniment room. Of the new things the most striking was the cinematograph film shown by Dr. R. G. Canti of St. Bartholomew's Hospital. Two audiences witnessed in this film the behaviour of the living cells cultivated *in vitro*. The photographs were taken from connective tissue (periosteum of the chick) and cancer tissue (Jensen's rat sarcoma). The method is being employed to investigate the effect of irradiation on tissue cells. The pictures showed the migration of the cells from the original implant, the intracellular structures, and mitotic division. Dr. Canti described the method employed for the production of the film, to which great labour had gone. Exhibits from the Strangeways Research Hospital at Cambridge further illustrated work of this nature. Dr. J. A. Andrews and Dr. Honor B. Fell demonstrated the method of dark illumination of tissue cultures *in vitro*. The intracellular structures were well shown, and the active movements of the cells grown from malignant tissues could be compared with the slow movements of fibroblasts. Dr. Canti and Dr. Malcolm Donaldson illustrated the effect of radium on mitosis by tissue cultures exposed to the gamma rays of radium in a lead incubator. The earliest observable effect is the cessation of mitosis; this is followed by the appearance of "breaking down" cells, arrest of outwandering, and the death of the tissue. Dr. F. G. Spear and Miss D. Strangeways exhibited diagrams illustrating the quantitative effect of radium irradiation on mitosis of cells grown *in vitro*. It appeared that in order to obtain the same biological effect with a small intensity of irradiation as with a large one, it is necessary to increase the time of exposure more than would be expected by physical considerations. The apparatus used for these investigations was shown. Dr. Fell also exhibited stained microscopic specimens of the cytology of Jensen's rat sarcoma cultivated *in vitro*. Sir Almroth Wright with Mr. Alexander Fleming, F.R.C.S., and Dr. Leonard Colebrook demonstrated the methods of studying the defensive powers of the organism and testing the effect of therapeutic agents. It was pointed out that serum fails to furnish cultures when implanted with ordinary (non-serophytic) microbes, and exerts a bactericidal effect upon some of them; on the other hand, it furnishes a favourable culture medium for a special class of microbes (serophytic microbes), which are killed by blood containing leucocytes. The demonstration included an account of the agencies which can be employed to reinforce or replace the bactericidal powers of the organism; these were: first, immunization with vaccines by the administration of chemical agents which increase the number of leucocytes, and light treatment; secondly, the use of antiseptics which destroy the bactericidal power of the leucocytes, blood fluids, and blood; and thirdly, chemotherapeutical agents, which can confer bactericidal power for serophytes upon the blood fluids, and may, when the dose administered is tolerated by the leucocytes, increase the bactericidal power of the blood. A new type of electric discharge was shown by the British Thomson-Houston Company; Dr. Langmuir and his fellow workers had discovered that when into an arc produced in a hot cathode discharge tube tungsten vapour was introduced, special phenomena appeared. The British Museum had a display of oceanic angler fishes by Mr. C. Tate Regan, F.R.S., and of mimicry in insects by Mr. G. J. Arrow. Among the exhibits of historical interest from the collection of the Royal Society itself were the mace of the Society, presented to it by Charles II in 1663; the Charter Book of the Society containing the signatures of founder, patrons, and Fellows from 1662 to the present day; the official certificate of candidature for Fellowship of the Royal Society in favour of Lord Lister (1860); and the medals of the Society, including the Copley, awarded to Lister in 1902, and the Royal, given to him in 1885. Among other exhibits of this order were copies of telescopes made and used by Galileo; a set of Napier's bones, either used by Napier of Merchiston or early copies; a line-dividing engine made by James Watt in 1774; Joule's original electro-magnet and his water friction apparatus for determining the mechanical equivalent of heat; and, bringing things down almost to the present day, a set of apparatus illustrating the development of the microphone.

COMMEMORATION AT LISTER'S BIRTHPLACE.

UPTON HOUSE at Upton in Essex, where Joseph Lister was born on April 5th, 1827, is now the vicarage of St. Peter's, Upton Cross, in the County Borough of West Ham, and on the afternoon of Tuesday, April 5th, 1927, a commemoration service was held in the church.

The procession, headed by choir and clergy, which formed at the vicarage, included the Lord Provost of Glasgow, the mayors of West Ham and other Essex boroughs, with their town clerks and medical officers of health, the chairmen of neighbouring urban district councils, and justices of the peace, the chairman of the Essex County Council Public Health Committee, and the county medical officer of health, together with many members of the medical profession and representatives of the hospitals in the district. The service was taken by the Vicar of St. Peter's, the Rev. A. J. Parry, assisted by the Vicar of West Ham; the Rev. R. Rowntree Clifford (President of the West Ham Free Church Council) read the lesson from Ecclesiasticus xxxviii. The sermon was preached by the Right Rev. Guy Warman, D.D., Bishop of Chelmsford, and Sir Humphry Rolleston, Bt., K.C.B., Regius Professor of Physic in the University of Cambridge, delivered an address.

The BISHOP OF CHELMSFORD described Lister as a teacher of hope and an inspirer of love for the age in which he lived. He was also a man of faith; his faith in the discovery he had made was part of a greater faith, for his religion was part of the working apparatus of his life. Lister was also a man of persistent toil, and he found life hard work; with him, as with others, the reward of a thing well done was to have done it.

Sir HUMPHRY ROLLESTON, after recalling briefly the parentage of Lister and the early influences that surrounded him, said that the two great events in the history of surgery were the introduction in 1846 of anaesthetics, which made surgery possible, and had been called "the death of pain," and the discovery of the antiseptic and aseptic method, dating from 1867, which made surgery safe for humanity, and might, in like manner, be termed "the death of infection." Lister had long been thinking and preparing how to obviate the risks of the diseases which attacked patients after operations, but the discovery in 1864 that germs of micro-organisms caused putrefaction was made by the great Louis Pasteur. Most surgeons, if they heard of Pasteur's researches, would have been mildly interested in them, but Lister was able to grasp their significance, and henceforth devoted his life to applying this principle to the prevention of post-operative infection. His brilliant imagination, philosophic insight, untiring industry, and unflinching courage overcame the antagonism, not to mention ridicule, that his life-saving work provoked, and he finished his task. In 1867 Lister published his first papers on antiseptic surgery, and from that time he continued by most careful and indomitable research to improve the methods. The history of surgery had indeed been divided into two periods—that before and that after Lister's methods became adopted. Before his discovery as few operations as possible were done because of the risk that they would be followed by erysipelas, blood poisoning, pyaemia, hospital gangrene, tetanus, and death; abdominal operations, such as are so constantly done now for appendicitis, were practically unknown; to open a large abscess was almost certainly to sign the patient's death warrant. Hospitals, indeed, were spoken of as "houses of death." Lister, who was Professor of Surgery in Glasgow from 1860 to 1869, became Professor of Clinical Surgery in Edinburgh, and there continued to practise, preach, and perfect the doctrine of antiseptic surgery. Like most great advances and reforms, this life-saving discovery met with much opposition and criticism, and in order to overcome these adverse influences, and to spread the knowledge of the correct method of carrying out the antiseptic treatment, he accepted in 1877, when 50 years of age, an invitation to be Professor of Clinical Surgery in King's College, London, for, be it said with regret, his native city was the stronghold of antagonism. His London life fell into two almost equal periods: From 1877 to 1893 he was a busy hospital surgeon, gradually convincing all of the inestimable value of the antiseptic methods; in 1893 his retirement from the hospital, on account of age, and the sudden death of his devoted wife, leaving him a childless widower, entirely altered his life. Henceforth, with rare nobility of character, he devoted himself to public duties until his death on February 10th, 1912.

"Like Pasteur," said Sir Humphry Rolleston in conclusion, "and more fortunate than many reformers and pioneers, Lister lived to see his work bear fruit exceedingly, and died full of years and loaded with honours from all countries; but it is as the greatest material benefactor of the human race, who made surgery safe, and thereby did more than any other man to prevent suffering and save life, that we regard him with deep gratitude and thankfulness."

SOME OTHER CENTENARY CELEBRATIONS.

WE have received brief notes of celebrations of the centenary of Lord Lister from other places, and we feel sure that there are more to come. We are indebted to Professor I. H. Cameron for the information that on Tuesday last Dr. William James Mayo, surgeon and chief of the staff of the clinic which bears that name, was to deliver a lecture in Toronto, in which he proposed to commemorate the centenary of Lister and to discuss the relation of the basic sciences to surgery. Dr. Donald C. Balfour, who graduated at the University of Toronto in 1914, and is now specialist in the surgery of the stomach at the Mayo Clinic, recently endowed an annual lectureship, and this was the first of the series.

At Carlisle last week Dr. Norman Maclaren, surgeon to the Cumberland Infirmary, delivered an address to the Rotary Club, in the course of which he dealt with the achievements of Lord Lister, who, he said, belonged to a family settled in Bingley in Yorkshire. His mother, who was born at Maryport, Cumberland, was the daughter of Anthony Harris, a member of a family which came from the Allerdale Ward, about the lower reaches of the Cumberland Derwent. After describing how before Lister's great discovery the surgeon was dogged and hampered by sepsis, Dr. Maclaren recalled that Lister had himself stated how in 1864 he had been much struck by reading an account of the remarkable effects produced by carbolic acid on the sewage of Carlisle, a very small proportion not only preventing all odour from the lands irrigated, but destroying the parasites which commonly infested cattle fed upon such pastures. Lister visited Carlisle as the guest of Dr. Robert Elliot, the first medical officer of health of the city, by whom he was informed that in 1843 George Stephenson had made reports on the disposal of the city's sewage to the mayor and corporation, and in 1849 Robert Rawlinson to the General Board of Health. The use of carbolic acid for disinfection of the sewage was already working with some success in 1864. It was, Dr. Maclaren said, greatly to the credit of the municipality of Carlisle that it should have so early given attention to the disposal of sewage and so incidentally suggested to Lister a method of applying the principles he had evolved for the treatment of wounds, principles which had proved of such inestimable benefit to mankind.

England and Wales.

THE GENERAL INFIRMARY AT LEEDS.

THE one hundred and fifty-ninth annual report of the Leeds Infirmary was presented to a meeting of the governors held under the chairmanship of the honorary treasurer, Mr. T. F. Braime, on March 30th. Each year it is recorded that the Infirmary is working at full pressure, and yet each year some increase is noted. The total number of in-patients admitted during 1926 was 12,688, as against 12,083 during 1925. This is accounted for by a considerable increase in the medical cases, and especially in the aural department, and an increase in the number of accidents admitted, many of these being motor accidents. In the out-patient department the increase is very much greater, for here the limitations imposed by space do not tell to any extent. In the radiographic department the number of new patients seen was 11,752, as against 11,221 in 1925. In the electro-therapeutic department the new patients have gone up from 1,125 to 2,012, and the attendances from 33,184 to the enormous total of 59,222. An examination of these and of other figures brings it home to the mind that the voluntary hospital accommodation provided by Leeds is inadequate when viewed in relation with the large area it serves, with its importance as a medical centre, and with the fact that the Infirmary is the only general hospital in Leeds. If any doubt existed as to this, an inspection of the long waiting list would convince the most sceptical. The great necessity for an increase in the accommodation was emphasized by the chairman at the meeting, and the question of providing paying wards was mentioned and will engage the early attention of the board. Those who are sanguine can see on the vacant space within the grounds of the infirmary two new three-storied blocks containing about one hundred beds each, one at least of which would be devoted to paying patients and would be self-supporting. In this way a great need would be in some measure met and the pressure on the general wards lessened. There is no doubt that at present a large number of beds are occupied by those who certainly

cannot afford the great expense involved by medical and surgical treatment in a nursing home, but who ought not to be treated gratuitously, and there are many of them who do not wish to be so treated. Not only in Leeds but all over the country this is a crying need of the times. The financial condition of the Infirmary is causing the board great anxiety. Compared with 1914 the expenditure has more than doubled, while the regular income has not increased to anything like the same degree. This is not the place to enter into details of finance, but it is clear that the time has come when a great effort must be made to increase the regular income of the Infirmary and to provide the necessary accommodation for the efficient carrying on of the work. The unofficial union of the Infirmary with the University has been strengthened during the year. A site has been provided by the Infirmary for the building of a properly equipped dental hospital and school. The University, of course, confers degrees and grants diplomas in dentistry, and the school of dentistry has developed on sound lines since it was started some twenty-five years ago. At first it found good accommodation in the newly erected buildings of the public dispensary, but more recently it has required to seek temporary new quarters. These have been provided by the Infirmary, which placed at the disposal of the dental board the large out-patient room, which has been fitted up, and which fills the purpose excellently, as a temporary place of accommodation. The new dental hospital is approaching completion, and the large amount of space which will be set free in the Infirmary by the transference of the dental work to its own premises will, it is hoped, be utilized for the development of the department for massage and therapeutic exercises. Another very important development, which it is hoped will soon be completed, is the instructional block at the Infirmary. In 1922 (see JOURNAL for January 7th, p. 21, and May 27th, p. 844) some account was given of the methods of teaching in medicine and surgery and of the alterations which it was deemed wise to carry out in view of the report of Sir George Newman on medical education. These involved the appointment by the University of three whole-time tutors and certain other officers, and it was pointed out that a great advance would be made by the provision of a properly equipped instructional block. This has been in part secured, and it is hoped that the University will, in the interests of the teaching for which it is responsible, complete this, and so secure for Leeds what it is believed will form one of the best teaching departments in the country. The fuller development of the skin department is referred to elsewhere (see p. 679).

THE L.C.C. AND PAPWORTH COLONY.

The London County Council a few weeks ago instructed its Public Health Committee to report on the Papworth Institution (or the Cambridgeshire Tuberculosis Colony), with a view to the possibility of the Council establishing a similar institution under its own control. Dr. Noel Bardswell accordingly visited the colony, and his report, with the conclusions of the committee, was submitted to the Council on April 5th. Papworth comprises both a sanatorium and an industrial settlement, but the relatively small number of patients who can be absorbed annually as permanent settlers is a limiting feature of this kind of institution which has to be taken into account. Since Papworth was opened about ten years ago 193 patients have been sent there for treatment under the Council's scheme, but of this number only 20, on completing treatment, were transferred into the settlement. One of these has since died, another has been readmitted to the sanatorium, and the remaining 18 are still resident and employed. The total number of settlers is 160. Every patient admitted to Papworth and every one of the 200 sanatorium patients to-day working in the various workshops is a potential settler, but few have in fact any prospect of becoming permanent residents. Papworth, as a complete entity, with its sanatorium, industries, estate, and settlement, at present approximately pays its way, but no charge is made for interest upon the capital sunk in the undertaking; a public authority running a similar institution would be in a much less advantageous position as there would be interest and redemption charges to meet. Institutions combining treatment and training were undertaken, in the first instance at all events, for the benefit of tuberculous ex-service men, and a considerable proportion of the capital expenditure was obtained from voluntary contributions subscribed for their benefit. An ex-service man, by reason of his disability pension and the provision made for his dependants, is in a favourable position for taking full advantage of any portion of the tuberculosis scheme, and the absence of these considerations in the case of civilians places the problem on a different footing. The conclusion of the Public Health Committee of the Council is that every credit is due to the medical superintendent of Papworth and those associated with him for their successful efforts, and that institutions on the Papworth pattern are suitable objects for philanthropic interest and support, but that such enterprises cannot offer a solution of the problem of providing suitable employment or occupation for urban tuberculous persons after discharge from sanatoriums. It is not prepared, therefore, to advise the establishment of a similar institution by the Council.

THE PRINCE OF WALES ON MENTAL AFTER-CARE.

Wordiness at public gatherings is a frequent matter of lament, but the extreme in the opposite direction was surely reached at the Mansion House of all places, that home of national oratory, on Thursday of last week at the meeting to further the work of the Mental After-Care Association. The Prince of Wales, who is the patron of the society, was present, the platform was occupied by a number of distinguished mental specialists and social workers, the Lord Mayor and Sheriffs were the hosts of the occasion, and a gathering of several hundreds of people were in their places in the Egyptian Hall for half an hour before the meeting was timed to begin. Yet the whole proceedings, which included four speeches, occupied barely ten minutes, and the meeting was over before some realized that it had begun. The Prince said that, although the association was founded nearly half a century ago, it was only within the last ten years or so that the general public had come to realize the great importance of its work. One of the legacies of the war was the care of a large number of men whose disability was not physical but mental. The urgent need of helping such men had led the medical profession to speed up its study of mental infirmity generally, so that this particular branch of medical science had made very great progress, and had brought home to the general public the fact that mental trouble was just as much a disease as any of the more familiar physical illnesses. No one knew better than himself with what wonderful generosity the public always responded to an appeal for the physically infirm, but that day, as patron of the association, he asked for a similar measure of generosity for those mentally afflicted. For forty-eight years the association had carried on its work in the face of many difficulties. Many patients had been restored to normal health when, but for the association, they would have remained always a charge on their relations or on the State. The Prince summarized briefly the objects for which the association worked: it facilitated the discharge of patients from institutions by acting as an intermediary between the hospital and the patient's home or by offering accommodation in a cottage home when the friends of the patient were unable to receive him; it consolidated recovery by providing for convalescence at the seaside or in the country, or by helping the sufferers to obtain suitable employment, and, finally, it prevented relapses by the personal supervision of specialists or by the provision of such extra nourishment or surgical appliances as the circumstances might require. The association was often also able to give help to prevent threatened cases of mental infirmity developing. He assured the association of his warmest sympathy and his wishes for the success of the appeal on behalf of the funds of the association which had lately been made to the public. Dr. R. Percy Smith announced that as a result of this special appeal the amount to hand was £8,436; a large contribution to this total was due to a broadcast talk on behalf of the association. The Lord Mayor proposed a

vote of thanks to the Prince of Wales, and this having been seconded by Sir Charles Wakefield, and carried with much acclamation, the proceedings terminated.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL.

Following the opening of the new aural wing of the Kent County Ophthalmic Hospital at Maidstone by Lady Harris, it has been decided to change the name of this institution to the Kent County Ophthalmic and Aural Hospital. The new wing, which has been erected at a cost of upwards of £10,000, includes a children's ward, with accommodation for eight patients, a single private ward, and an operating theatre with sterilizing and anaesthetic rooms. Two consulting rooms have been provided on the ground floor, with good waiting rooms and dispensary accommodation; there is also a dark-room for examinations, a casualty and emergency operating room, a main sterilizing and isolation room, and a canteen. The extension increases the number of beds of the institution to seventy-two, and greatly improves the facilities for dealing with out-patients. Mr. J. Aldington Gibb, senior honorary aural surgeon, gave a brief account of the history of the hospital since its foundation eighty years ago, and stated that over 15,000 patients required treatment each year. In 1926 more than 1,000 operations had been performed. At the annual meeting of the hospital held before the opening ceremony, it was announced that the number of in-patients during 1926 was 913, the number of new ophthalmic out-patients 5,201, and of new aural cases 3,814; in addition 1,091 casualty cases had been dealt with during the year. Lord Harris referred to the very satisfactory result of the work of the Weekly Subscribers' Fund, which had made the receipts for the hospital larger than those of 1925, despite substantial decrease in the annual subscriptions and donations. He added that the hospital set an example to other institutions in the country in the success it had achieved by arranging for a wider distribution of its appeal, and by extending to a greatly increased number of people the benefits of its services in return for a small subscription.

Scotland.

SCOTTISH UNIVERSITIES SEAT.

THE Unionist associations of all the four Scottish Universities have unanimously adopted Mr. John Buchan, the well known novelist and writer on historical subjects, as their candidate for the seat in Parliament rendered vacant by the death of Sir Henry Craik. Mr. Buchan is a graduate of Glasgow and Oxford Universities, and acted as private secretary to Lord Milner in South Africa. The two present members are Sir George Berry and Mr. D. M. Cowan. The Liberal organization has decided not to nominate officially any Liberal candidate, and Sir John Collie has now announced that in order to avoid a three-cornered contest he has withdrawn his name. Action has been taken by the Scottish Executive of the Independent Labour party, Glasgow University Labour Club, and the Socialist Teachers' Society to nominate a Socialist candidate for the vacancy. The name of Mr. H. N. Brailsford has been mentioned, but he is said at the present time to be in Russia and unlikely to return to this country for some time. Other proposed Socialist and Communist candidates include the names of a Glasgow teacher and a Glasgow doctor. A meeting is to be held shortly for the adoption of a candidate.

MUIRHEAD CHAIR OF OBSTETRICS AND GYNAECOLOGY, GLASGOW.

The Board of Curators has appointed Dr. James Hendry, M.A., B.Sc., M.D., F.R.F.P.S.G., to the Muirhead chair of obstetrics and gynaecology in Glasgow University, rendered vacant by the appointment of Dr. John M. Munro Kerr to the Regius chair of midwifery. Dr. Hendry, who was born in 1886, is a graduate in arts, science, and medicine of the University of Glasgow. Immediately after graduation he visited gynaecological clinics at Berlin, Leipzig, Munich, and Vienna, and spent three months in the Clinique Tarnier at Paris. Returning to Glasgow in 1914, he was appointed second assistant to the Muirhead professor and dispensary gynaecologist to Glasgow Royal Infirmary. Among more recent appointments held by him were those of physician to the Royal Maternity and Women's Hospital at Glasgow, assistant gynaecologist to the Royal Infirmary, and consulting obstetrician to the Lock Hospital, Glasgow. In 1916 he proceeded to service in France. He is the joint author with Professor Munro Kerr of *Notes on Midwifery*, and with Professor Munro Kerr, Dr. James Haig Ferguson, and Dr. James Young of a *Combined Textbook on Obstetrics and Gynaecology*. He has also contributed numerous articles to current medical literature.

GLASGOW ROYAL CANCER HOSPITAL.

At the annual meeting of the Glasgow Cancer Hospital on March 20th, Dr. Buchanan pointed out that solution of the problem regarding cancer would depend, not only on the physician and surgeon, but largely on the co-operation of the public. While ordinary bacterial diseases were of the nature of an accident, cancer was more subtle and took its origin most frequently as the result of some long-continued irritation. Its cure at the present time was dependent on early treatment, and it was here that the co-operation of the public would be of essential help, not only to the individual but to preventive medicine, if persons over 30 years of age were encouraged to submit themselves to annual examination. It was not yet possible to assign any one cause to cancer, although evidence existed in regard to some cancers in favour of their being due to an organism. He thought that the people of Glasgow owed a debt of gratitude to the directors and staff for promoting the research side of the institution's activities. Professor Archibald Young said that research required money and plenty of it, and it lay with the public to see that this research was not stinted or checked for lack of funds. Sir George T. Beatson also spoke, and agreed that irritations seemed to be the common basis upon which researchers into this malady were now working. A biochemical change appeared to be the cause.

ABERDEEN INFIRMARY SCHEME.

Only a small part of the Royal Infirmary and Aberdeen joint hospitals scheme has so far been begun; this consists of the erection of buildings for the new Hospital for Sick Children, towards which £100,000 has been secured. The whole scheme aims at raising a total sum of £400,000, of which £300,000 is intended for the erection of the new infirmary, and £100,000 to increase the endowment fund. The Lord Provost has already been promised £200,000 for the Royal Infirmary, of which £100,000 was contributed by four friends of the scheme. Various donations, ranging from £1,000 to £10,000, have also been intimated, and the subscription list includes a sum of £11,200 from the Cruikshank Trust and £30,000 from the Miss Fraser Trust. The Lord Provost, speaking recently at a meeting of the Royal Hospital for Sick Children, said that the Royal Infirmary was as much in need of extension and ought to be built in the neighbourhood of the Children's Hospital. He thought that it was highly desirable that the Royal Hospital for Sick Children, the Royal Infirmary, the University pathological department, and, he trusted, the city's public health department, should all be built together at Forresterhill, and negotiations towards that end were progressing satisfactorily.

WORK AMONG THE DEAF AND DUMB.

At the annual meeting of subscribers of the Edinburgh Deaf and Dumb Benevolent Society, on March 29th, the Lord Provost Stevenson, in moving the adoption of the annual report, said that for eighty-six years the society had been carrying on its work with increasing activity and efficiency. In the past year it had spent £670 in relieving deserving cases. The financial position was also satisfactory, and it had a small surplus on the year's working. The society was about to purchase an ideal spot at Hawthornden which would provide a rest home for beneficiaries.

Correspondence.

CERTIFICATION OF THE INSANE.

SIR,—Your leading article *re* the Hume-Spry case will doubtless be widely read, and medical men will be grateful for your clearly expressed view of the difficulties which beset any who, in the course of their practice, are called upon to certify a patient as insane and a fit and proper person for care and treatment.

I do not think I am overstating when I say that, in this special case, several leading articles might be written on various aspects of the evidence given before the court during the fifteen days of the trial, but as a prosecution is threatened against the plaintiff, many common-sense opinions might be taboo.

There is, however, one aspect of the case upon which you do make a short observation, but which, to my mind, should have been much more emphasized: that is the action under Section 13 of the Lunacy Act of 1890. Under this section, upon information being given to a relieving officer or the police that a person of unsound mind is likely to be dangerous to himself or others and is not under proper care or control, either of these officials informs a magistrate, who, if he thinks it necessary, makes an order for two medical men to visit, examine, and, if necessary, certify such person, and, presuming he is satisfied that these certificates prove that the patient is insane and needs care and treatment, he makes the order. On the latest ruling of the Law Lords, medical men so acting under an order by a magistrate cannot be proceeded against and automatically the action is stopped.

Had Dr. Percy Smith recognized his possible danger in this specific case and refused to examine the patient or certify, except under an order by a magistrate as described in Section 13, I take it that this case would never have been heard of. It is interesting to note that the advice to act under this section was given to Dr. Dill by the relieving officer, as stated in the case of de Freyville *v.* Dill.

Unfortunately, the committee of medical men appointed by the British Medical Association to watch this 1890 Lunacy Act, upon which I sat, overlooked part of Section 13—namely, that persons so certified have to be sent to the county asylum, from which, of course, they can subsequently be transferred to a registered hospital or a private mental home or single care.

It has long been brought home to me that this ruling is pernicious and prevents the section being more used. In my suggestions to the Royal Commission on Lunacy I pointed out that, if the relatives of the patient have arranged for some registered hospital or private mental hospital to receive the patient, he or she should be taken direct to such institution and not to the county asylum.

In more than one case recently I have been able, by sane, reasoned persuasion, to get the magistrate to make an order direct to the place chosen by the relatives, on the ground that a county asylum would not be a suitable place for the specific case.

I had hoped that the Royal Commission on Lunacy would have taken much more notice of very urgent alterations in many sections of the present Lunacy Act—alterations which would have greatly benefited the insane and all those concerned with their care; and I was very disappointed when, on reading their invaluable report, I found these very necessary alterations were not even commented on.

I hope the British Medical Association will do all in its power to get this 13th Section altered as suggested, for I feel confident that, by utilizing this section, many of these legal actions would never come into being.

In concluding this letter, may I touch upon an inconsistency in the legal mind which, in both these recent cases, has come vividly before me, and, to my knowledge, before the minds of many of those called by the press "the man in the street"? Have not these judges trying these cases quietly swallowed and noted down evidence, as proof of an unsound mind, which if brought before them as a defence in a criminal case they would, metaphorically speaking, have laughed out of court.—I am, etc.,

Bournemouth, April 3rd. LIONEL A. WEATHERLY, M.D.

SIR,—While agreeing entirely with your leading article on this subject, I believe that many of the profession will think the suggested remedies insufficient, and that it is time the profession took a very definite and strong line to obtain complete protection for the medical man who undertakes the unpleasant duty of certifying. Of all the persons necessarily concerned in such proceedings, he is the only one who stands to be shot at. The justice of the peace, the relieving officer, the police, and the relatives all go free, but the unfortunate doctor has legal proceedings taken against him. Even when these fail, as they usually do, the anxiety and loss of time, and perhaps of practice, are immense.

It may be argued that the patient must be protected, and of course he must. The justice is supposed to be the patient's protector, and in my experience (and I certify some hundreds of cases annually in the course of my duties) he is usually an efficient protector and needs reasonable common-sense evidence placed before him before he signs an order of committal to a mental hospital. But if more safeguards are desired it would be easy to devise them. For example, additional medical certificates could be demanded; or special boards or courts for certification could be set up, of any constitution desired, with a strengthening of the lay element if thought fit; and a special panel of medical men could be drawn up to make the medical certificates of lunacy, such medical men to have had special experience in mental disease. No doubt other methods could be suggested. The point is that, proper safeguards having been provided, the medical man should be as safe as the other persons taking part from vexatious persecution afterwards. I believe the public would support a strong line on the part of the British Medical Association to have this matter put on a proper footing.—I am, etc.,

J. C. MUIR,
Medical Superintendent, Whipps Cross Hospital,
April 1st. London, E.11.

SIR,—It is to be hoped that a result of the Hume-Spry action will be to discourage one of the varieties of evidence which has figured so largely in such trials.

Any doctor who writes a certificate about the condition of a patient, whom he has not recently seen, is rebuked, with dire penalties. But he may, in a witness-box, make an authoritative statement about a case which he has not seen at all, or which he sees, for the first time, years after the alleged condition occurred. Such proceedings do nothing to help the cause of justice, they do no good to the profession, and they often cast an undeserved aspersion on the general practitioner who alone knew the facts of the case.—I am, etc.,

Wanstead, E.12, April 3rd. A. CAMPBELL STARK.

TRAUMA AS A CAUSE OF AURICULAR FIBRILLATION.

SIR,—The paper by Drs. Hay and Wallace Jones on this subject (March 26th, p. 559) is important, and the opinions expressed in it will receive due respect. As I said in my book *Incapacity or Disablement in its Medical Aspect*, "I have never met with a case in which auricular fibrillation could be attributed to sudden strain [I meant in a healthy or a diseased heart], and I should be very unwilling to believe that strain could cause it." My difficulty in the matter lies in the fact that auricular fibrillation is not uncommonly present in workers without their having any knowledge of it or any discomfort from it. I have on several occasions found it when the complaint has been nothing to do with the heart, in old workers in cotton mills and in business men; and I hear from a medical friend, who sees many workmen in a big engineering works, that he is surprised how often he finds it in men actually working when they are examined for some reason or other not connected with the heart, and how they keep on at work with it. How, then, can we be sure that the auricular fibrillation found after some strain was not present unsuspected before it, unless the case was examined before the strain and auricular fibrillation found to be absent? The more I see of heart affections the more astonished I am

to find how some people will notice and worry over single premature systoles, and others will be quite unconscious of and continue at work with the "delirium ventriculi" of auricular fibrillation. Drs. Hay and Jones recognize a group of cases in which the date of onset cannot be determined, and, therefore, in which fibrillation was present unsuspected for some time previous to being found. My point exactly.

I can quite believe that the condition can be caused in a normal heart by severe electric shock, as in the case he refers to; violent electric stimuli can affect and disturb seriously the neuro-muscular conducting system of the auricle. In Case II I should think that the good supper, by distending the stomach, would be likely to cause or contribute to upsetting the rhythm of the heart, as this organ has such a great influence over the action and rhythm of the normal or diseased heart. It is the commonest cause of auricular premature systoles. At necropsy I have found lumps of meat in it, which have caused pain and fatal syncope when the man was hurrying along after a heavy meal and there was no lesion of the heart.

One of the best methods of dealing with heart disease, even anginal pain of any form, is to avoid exercise after meals, and especially not to hurry after breakfast; to take small substantial meals, and, again, especially a small breakfast. That the fibrillation might have been present before the strain is suggested by the fact that it has persisted for fourteen years after the trauma. How can it be proved that it was not present before the strain? Cases III, IV, and V are unconvincing, because again there is no proof that the fibrillation was not present before the strain.

I must confess, however, that I am inclined to believe that strain affecting an already diseased ventricle or a heart with some abnormality might induce auricular fibrillation secondarily, but proof is difficult. No heart that fibrillates is normal, even if the auricular fibrillation is only paroxysmal.

However, these are only my opinions: my friendly critics, who told me of their views before publishing them, hold others, and I respect them as I have no doubt courts of law will.—I am, etc.,

E. M. BROCKBANK, M.D., F.R.C.P.

Manchester, April 1st.

SIR,—The very interesting statements made by Drs. Hay and Jones (March 26th, p. 559) can hardly be allowed to pass unchallenged.

They state that in four of the five men in whom fibrillation started as the result of an accident there was no evidence that the heart was either diseased or abnormal, notwithstanding we are told that Case V had suffered from rheumatic fever "twenty years ago," and that Case IV had been in hospital for some heart affection. What evidence is there that these two cases had not suffered periodically, without realizing it, from some form of cardiac irregularity? Do not many people put down many of their precordial disturbances to indigestion, and in so doing are quite right as to the cause although ignorant as to the medium whereby they are made to realize that disturbance?

Case III suggests a very close connexion between a "good" supper of pastry and buttermilk and the heart disturbance: had this man become disabled at work it would be interesting to know to what extent personal indiscretion would be to blame for this attack. Indiscretion is a form of contributory negligence which would have to be taken into consideration should the case go to arbitration. The heart of a person predisposed to these disturbances cannot be said to be normal, nor can that person be said to be healthy. The myocardium in such cases generally shows evidence of the effects of some poisoning which is quite consistent with auto-intoxication.

Elsewhere I have drawn attention to the fact that the history of stomach troubles is more often present in cases of heart disease than even rheumatic fever. An examination of a large number of so-called "healthy men" will reveal the presence of carious teeth and puffy inflamed gums, and it will be found that their food is poor and badly cooked, whilst the ruddy glow can be traced to the cup that both cheers and blears. These are the conditions which readily conduce to auto-intoxication, and in the near future all employers will find it remunerative to have their men carefully examined on starting work as well as to take an active interest in the housing and feeding conditions of their workers, if only to discount the serious effects of applications for compensation on account of the fibrillation suggested by Drs. Hay and Jones.—I am, etc.,

Swansea, March 26th. G. ARBOUR STEPHENS.

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES.

SIR,—There is evidence that what are termed generally philosophic studies would be of advantage to many medical men, both by expanding and defining their outlook in relation to general or individual experiences and by affording assistance in the solution of practical difficulties. The need for clear thinking was never more apparent than it is to-day, when our expanded range of knowledge adds constantly to a stock of exact information, the bearings of which cannot be confined to any one branch of science, but make themselves felt in every field. "What is it all about?" is a question that every well informed man asks himself when a mental problem, perhaps with a direct reference to action, presents itself to him in a form that is not dictated by his particular equipment. And the more well informed he is, the more clear will it be to him that he needs fundamental guidance. In other words, he desires help in clear thinking.

The recently formed British Institute of Philosophical Studies exists in order to afford this help to those who need it. The general object of the Institute is stated thus: "To bring leading exponents of various branches of philosophy into direct contact with the general public with the purpose of satisfying a need, felt by many men and women in every walk of life, for greater clearness and comprehensiveness of vision in human affairs."

Medical men and women are to-day meeting many difficulties that are arising through the vast development of their science—developments of knowledge, of technique, and of administration; these are being accompanied by a broadening of view in their ranks, and also by a multiplication of the relations of medicine to society brought about by far-reaching changes in the law. The position must therefore often arise when medical men or women need clearness and comprehensiveness of vision. They would benefit by an opportunity of taking counsel with those in other sections of activity, who may be meeting their own problems from a different angle or who may be able to give an opinion on medical problems which gains in breadth and public influence through its detachment from medicine.

Further, medicine by co-operation can confer on those other sections of activity the advantages of sharing considered medical opinion and of learning the arguments relied upon for its establishment.

Sociological and psychological questions arise constantly out of all medical practice, and not only out of those sides of medical practice apparently concerned with mental disease or moral conduct, while metaphysics must play a part in any comprehensive attempt to distinguish between normal and abnormal conditions, physical or mental—indeed, between health and disease. A general philosophical equipment will be of great use to the practitioner as a supplement to all detailed scientific knowledge, for it will conduce to clear thinking.

For these reasons we advocate the claims on members of the profession of the British Institute of Philosophical Studies, the temporary offices of which are at 88, Kingsway. The honorary secretary would be glad to give any information desired. The subscription payable by members of the Institute is only £1 1s. per annum.—We are, etc.,

DAWSON OF PENN.
THOMAS HORDER.
HENRY HEAD.
T. W. MITCHELL.
WILLIAM BROWN.
H. CRICHTON-MILLER.

88, Kingsway, London, W.C.2, March 31st.

MIGRAINE.

SIR,—The discussions at the last Annual Meeting of the Association[1] and at a meeting of the Section of Medicine of the Royal Society of Medicine,[2] and the letters that have appeared in the JOURNAL during the last few months, have shown two wholly different conceptions as to the nature and treatment of migraine. The letters have been from medical men, mostly sufferers themselves, who have given us the benefit of observation and experiment on their own persons.

These all maintain that faulty metabolism and hepatic deficiency are the important causes of migraine, and have satisfied themselves that for its prevention and control abstention from certain articles of diet and attention to the action of the liver and bowels are the important points. Dr. P. J. Cammidge[3] adduces evidence from the laboratory that during attacks of migraine the urine frequently contains acetone bodies, and that hypoglycaemia may be present. Attacks of migraine may be benefited by glucose, because its administration "enables the defective liver cells to carry out their functions more efficiently." On the other hand, Professor E. Bramwell in his opening paper, and subsequent speakers at the Annual Meeting, attached but the slightest importance to food poisoning or derangement of liver as a cause of migraine. In his recent paper at the Royal Society of Medicine Dr. C. P. Symonds only mentions cursorily that "other toxins derived from faulty metabolism of fats, sugars, or proteins may be responsible," while he lays greater stress on other points. Of a dozen speakers who followed only two remarked on the importance of diet as the cause.

For many years I have been convinced that attacks of migraine point to some metabolic defect, whereby food poisons are allowed to enter the circulation. When these have accumulated to a certain extent an attack is determined. The periodicity of migraine has been emphasized by several of your correspondents, and is difficult to explain by any ocular condition, or by changes in the pituitary gland, or by other suggestions made at the meetings. Not only this, but some sufferers find that the headache is on one side in one attack and on the other side for certain in the next. Further, an attack definitely and constantly follows the taking of particular foods and drinks which experience has shown to be harmful.

Experiment is usually required in each case to ascertain what are the causative articles. One man's food is another man's poison, but in general my practice has been to follow Alexander Haig, and begin by cutting off all meat, meat soups and extracts, eggs, tea, coffee, and all alcohol, and to restrict sugar, chocolate, and animal fats. In a large proportion of patients this reduction produces an obviously good effect, and it is only necessary to modify the diet subsequently according to observations. In a small proportion fish and fowl, many fruits, and all sweets and jams may have to be excluded. The patient may be restricted to breads, biscuits, cereals, milk, milk cheeses, and certain vegetables and nuts, etc. Few persons will persist with such limitation, but they will have discovered what are their particular enemies, and they will know that the control of symptoms is in their own hands.

Though diet is the most important cause, other factors have, of course, to be taken into consideration. I assume that there is an exalted sensibility of some part of the brain. This may be what is hereditary, and probably explains the pathognomonic constancy with which women have their attack of migraine before or during the menstrual period, when their nervous systems are disturbed. Excitement, worry, and overwork are mentioned by several writers, and generally allowed to be powerful factors. The effect of eye-strain perhaps may be explained by this abnormal excitability of the brain. Migraine is sure to follow in many persons a train or motor journey or a visit to a cinema from the fatigue of the eyes caused by watching rapidly moving objects, and in some cases from the vibration. The correction of errors of refraction certainly helps many sufferers, but I think that the majority had already discovered for themselves that overuse of the eyes was their trouble. A large proportion of the population have some amount of astigmatism and do not suffer from migraine, while others find that errors of diet are more important than slight errors of refraction. Dr. G. Maxted kindly sends me the following information. Of 1,000 consecutive private patients, thirty complained of migraine. Of these seven had no error of refraction, while the remainder had astigmatism—mostly slight. Ten had myopic astigmatism, the others hypermetropic. Though all the twenty-three persons were asked to report on themselves, only four did so. Of them, three had found relief from the use of glasses, and the fourth stated that she was not relieved.

Most of the drugs found useful in migraine are nerve sedatives, such as luminal, bromides, and the phenacetin class. Others, such as sodium salicylate, are thought to help elimination of poison. For the attack itself Faivre cachets have seemed to me to be especially efficacious, but aspirin is the most useful drug in some cases.

Apart from causes acting directly through the nervous system, cold, bad air, and excessive exercise may be mentioned. Some patients find that they are worse in a too bracing or stimulating climate. Cold checks the action of the liver, and a hot bath is helpful to some sufferers. Exercise probably stirs up toxins which had been stored away. It is generally agreed that the amount of meat consumed by these patients must be particularly attended to, but I think that low living is as common as high living amongst them, and that they are drawn from all classes of society. I find them characterized by low rather than by high blood pressure, and of spare rather than of plethoric build. But the two opposite types of constitution are seen in sufferers from migraine.

These rough observations leave several points wholly unexplained. Why is the headache one-sided? Why do the same things produce an attack in one person and relieve it in another, or do each at different times? Tea, coffee, champagne, and calomel are examples of this double action.

Amongst my cases I have looked up those of three doctors who consulted me for migraine some years ago, and have asked them for their final conclusions. The first tells me that after he had been subject for years to an attack every week, he went six months without one while he abstained from all red meat. Latterly he has relaxed, and has had some return of slight attacks. He knows that whisky will bring on his migraine, as noted by "Consulting Surgeon" in his letter to the JOURNAL, and that he has no ocular cause. The second doctor writes: "Without any question I am the better for giving up all meat; even a fried egg or some vegetables fried in lard will produce genuine migraine." Raw apples have the same tendency. After mentioning such recognized causes as nerve strain and bodily fatigue, he goes on to refer to overuse of his eyes, and states that this does not bring on genuine migraine unless he has also transgressed dietetically. The third doctor is satisfied that his migraine is chiefly attributable to taking certain articles of diet. He names apple first, and says that a mouthful will bring on an attack in a few hours. Chocolate, cocoa, eggs, and meat, except in very small quantity, are found to act as poisons. If he is tending towards an attack a glass of champagne will precipitate it, but if he is throwing an attack off more champagne will help him. Beer is poison to him, as to many such patients, and to a less extent sherry and other wines. He is better from the use of spectacles, but he lays less stress on them than on diet. He says that aphthous stomatitis is often associated with attacks of migraine.

The articles of diet mentioned by my patients correspond closely with those found to be provocative of migraine by your correspondents. I also find mention in my notes of their more anomalous symptoms of migraine—exaggerated sense of smell and of hearing, difficulty in speech and confusion, pain in one or other arm, and weakness of the right arm.—I am, etc.,

F. W. BURTON-FANNING, M.D., F.R.C.P.

Norwich, March 20th.

[1] BRITISH MEDICAL JOURNAL, October 30th, 1926.
[2] Ibid., February 26th, 1927.
[3] Ibid., January 1st, 1927.

THE SURGERY OF GASTRIC AND DUODENAL ULCERS.

SIR,—I have read with considerable interest Mr. Flint's comments on Mr. Souttar's figures of gastric and duodenal ulcers, for I have on many occasions pointed out that my own figures differed from those usually published.

Up to the time of my last analysis, some three or four months ago, the figures for the cases of chronic ulcer upon whom I have personally operated privately and at the London Hospital are as follows:

Uncomplicated lesser curve ulcers	278
Uncomplicated duodenal ulcers...	278

It is curious that the numbers in these groups should be identical, but as to their nature there can be no question. The lesser curve ulcers are never nearer than 1½ inches to the pylorus, and are often very remote. In addition to these groups it is my custom to distinguish pyloric ulcers as a separate variety—a custom with which all surgeons will not agree. My reason for so doing is that any ulcer which involves the stomach, even in a small part, has a tendency—although it may be a very slight one—to become carcinomatous, while duodenal ulcers have not this tendency. Hence, any ulcer which even in part passes over the pyloric white line, or over the pyloric vein, is grouped as "pyloric" and not as "duodenal." In this group there were 162 cases. Even if these were grouped as duodenal it would only cause the proportion of duodenal and gastric to be about 3 to 2, which varies considerably from Mr. Flint's proportion. Moreover, these are only the *uncomplicated* cases, and there are not included hour-glass stomachs, ulcers found on the lesser curve after gastro-enterostomy performed elsewhere, perforated ulcers, etc. The figures for the completed groups are:

Duodenal ulcers		278
Perforated duodenal ulcers		23
Gastro-jejunal ulcers		33
		334
Lesser curve ulcers...		278
Hour-glass stomach		49
Perforated gastric ulcers...		36
After operation elsewhere, etc....		72
		435
Pyloric ulcers		162

So that if the pyloric are not included there is a considerably greater frequency of gastric over duodenal. Even if the 162 pyloric are added to the duodenal group the figures very nearly approximate. The difference between my figures and those of Mr. Flint can hardly be accounted for by a place distribution, for my cases have come from all parts of the globe, and even those operated on at the London Hospital have been sent from widely distributed areas. It is probable that they are simply the accidental differences found in dealing with relatively small groups of cases, for my own—of just under 1,000 cases—is much too small for vital statistics. That this is probably so is shown by the sex differences. In my own series all ulcers have been more common in men. Of the total of 931, 716 were males and 215 females. All observers agree that duodenal ulcers are more common in men, but in my series this was also true of the lesser curve ulcers, although many—especially the Continental surgeons—have had a different experience. In my uncomplicated group of this variety there were 211 males and 67 females. Even if the 49 cases of hour-glass stomach—a condition only found in the female—are included, these figures are 211 and 116, thus still giving a marked preponderance in the male.—I am, etc.,

A. J. WALTON.

London, W.1, April 1st.

ALBUMINURIA IN INFLUENZA.

SIR,—Having occasion to examine for physical fitness a large number of prospective employees annually, I have often found a varying trace of albumin in the urine of men who have recently had influenza. I have always regarded this as of toxic nature. In a recent case, whose certification I have postponed for review in three months, quite a heavy trace was noted. On referring to an old edition of Osler I found that nephritis is mentioned as one of the rarer complications of influenza.—I am, etc.,

FRANK B. SKERRETT, M.B.Lond.

London, E.15, April 2nd.

"BIRTH CONTROL."

SIR,—In the course of Dr. Dunlop's letter (March 26th, p. 597) he states that at the present day only a very small proportion of couples can get really sufficient food for themselves and more than three children. This, unfortunately, is all too near to the truth. But when he ascribes it to slow increase of the world's food supply he is assuredly straying from the facts. Now every mouth born into the world is born with a pair of hands, and the resources of Nature are inexhaustible and indestructible. Though it is undoubtedly all too true that willing hands, here and there up and down the globe, often cannot get ready enough access to Nature's resources, none the less foodstuffs are without question produced to-day in greater quantities proportionately to the population living than ever before.

In one of the latest publications from the League of Nations (the "Memorandum on Production and Trade," Geneva, 1926) it is shown that between 1913 and 1925 the population of the world increased by 5 per cent., but the production of foodstuffs (meat excepted) increased by 13 per cent., and the total production of raw materials by 17 per cent.

The productiveness of decent agricultural land has been increased at least seven to eight times in the last 150 years by the advances in scientific knowledge and in the intensive use of land. Lord Bledisloe at a British Association meeting last autumn pointed out that the wheat area had trebled in the United States of America during a period in which the population had trebled, but that the production of wheat had more than trebled.

The causes of poverty, involving insufficiency of food for the many, lie in other directions than a deficiency of the world's production of foods. It can be admitted, however, that not only are foodstuffs, like other commodities, badly distributed, but also produced in much less quantities than they would be if fuller advantage were taken through wider education, etc., of the potentialities of to-day. In this connexion two factors of importance to your readers come in, because both have to do with matters of public health and sanitation, and they are: (1) Over-urbanization. Wider support should be given to the garden city movement, which includes the plan of the appropriation by the community of community-created ground rents. And (2) the waste of nitrogenous manures which goes on year by year in most civilized lands through our present methods of the disposal of human corpses and human excreta. We cast £20,000,000 worth of nitrogenous manure into the sea each year around our own shores. If the earth is robbed of her natural food, which should automatically increase with every increase of population, she will not respond automatically to provide an increased food supply, and can only behave in niggardly fashion in spite of increase of knowledge and more scientific agriculture.—I am, etc.,

S. VERE PEARSON.

The Sanatorium, Mundesley, March 27th.

THE MORTALITY OF ACUTE APPENDICITIS.

SIR,—I endorse the article by Mr. Hunter on mortality from appendicitis (March 19th, p. 508).

One point is rarely mentioned in discussions on the question—a point which further weights the argument in favour of operation. To anyone trained to think analytically and statistically it must be clear that to the mortality from appendicitis treated by delay must be added the deaths from other surgical conditions which were more urgently in need of operation—for example, delayed operation which still has to be done for internal strangulation of bowel, perforated duodenal ulcers, and intestinal obstruction.

Surely deaths from these conditions should figure under deaths from "treating appendicitis by delay." They really

figure under deaths from the true cause found at operation too late. Similarly, to be fair, a death (much rarer) from pneumonia which simulates appendicitis so that a mistaken operation is performed, should figure as a death from an operation "for" appendicitis.

It is poor consolation to a patient treated medically for a few days, who then has to be operated upon for internal strangulation, and dies, to be able to reflect: "Ah, but I didn't have appendicitis! I had, statistically speaking, an internal strangulation."—I am, etc.,

Liverpool, March 24th. FRANK JEANS.

RESISTANCE TO QUININE IN MALARIA.

SIR,—The point raised by "I.M.S." in your correspondence columns of March 19th (p. 542) has already been discussed by others. Perhaps my own experience may be of interest. I first contracted malarial fever in the Shan States in 1897. I found powders, pills, and tablets of quinine sulphate useless, and the acid solution made me vomit; I was able to retain the powder dissolved in brandy, and soon got rid of the fever. Later on, when I was staff surgeon in Mandalay, I had a similar experience with many officers and their wives. This experience was repeated in the Punjab and again in the Northern Transvaal. It was not until I served in Macedonia during the war that the superiority of quinine hydrochloride was brought to my notice. I found it was not necessary to give intramuscular injections of quinine if the hydrochloride could be obtained, and was administered by the mouth. During the last five years I have treated a good many relapses of malarial fever in England. The records showed that the patients had previously been on the intensive course of quinine sulphate (the method usually prescribed). Under the hydrochloride every patient soon recovered, their blood films being all negative. I have heard from some of them since who have been free from fever for four or five years, and so I consider these cured.

In my opinion there can be no doubt that "I.M.S." is correct in suggesting that the so-called resistance to quinine is merely lack of absorption, as the sulphate has always been the chief preparation used everywhere on account of its cheapness.

The comparative value of the two salts is shown in the following table (after Manson).

Sulphate of Quinine.		*Hydrochloride of Quinine.*	
Percentage of the alkaloid in the salt	... 73.5	Percentage of the alkaloid in the salt	... 81.8
Solubility in water	... 1 in 800	Solubility in water	... 1 in 40

Hale-White's *Materia Medica* gives the solubility as follows:

Sulphate:	*Hydrochloride:*
1 in 800 of water.	1 in 35 cold water.
1 in 65 of alcohol (90%).	1 in 3 of alcohol (90%).

I always give these preparations of quinine dissolved in alcohol in bad cases.—I am, etc.,

R.A.M.C., DIPLOMA IN TROPICAL MEDICINE.

March 28th.

THE OPERATION OF TONSILLECTOMY.

SIR,—Presumably laryngologists will agree that in tonsillectomy an ambidextrous technique is desirable. But I think that neither of your correspondents (Mr. Lodge, BRITISH MEDICAL JOURNAL, January 8th, p. 56, and Mr. Roe, March 26th, p. 564) goes far enough, since they confine their remarks to the guillotine method. In enucleating tonsils by dissection, ambidexterity is at least quite as useful. For if the same hand be used for both tonsils, either the operator must change his position for one less comfortable, or else either his hands or instruments must be awkwardly crossed in or near the patient's mouth.

Personally I aim at being as ambidextrous as possible in every kind of surgical manœuvre. And in tonsillectomy, whether by guillotine or dissection, I have for years been so completely comfortable with either hand that at any moment it is a matter of indifference to me which one I am using.—I am, etc.,

H. LAWSON WHALE, M.D., F.R.C.S.

London, W.1, March 28th.

SIR,—I was so impressed with the similarity of the method of tonsillectomy described by Mr. A. J. S. Roe in his memorandum appearing in your issue of March 26th (p. 564), with my description of this same operation entitled "Tonsillectomy by propulsion and avulsion," which appeared in the *Practitioner* for August, 1925, that I would like to flatter myself with the belief that Mr. Roe had read that article; in any case I am glad to know that there are at least some others besides myself who appreciate the supreme advantages of ambidexterity and team work in carrying out the safe and rapid enucleation of the tonsils with the blunt guillotine in *all* cases. Personally I think the adenoids should on no account be removed until, the tonsillectomy having been carried through on both sides, the patient is lying in the lateral (Sims) position, in which the air passages form an inclined plane, with the mouth in the most dependent position, the advantages of which are obvious.—I am, etc.,

J. B. HORGAN, M.B., Ch.B., D.L.O.,
Honorary Laryngologist to the North Charitable Infirmary, Cork.

March 29th.

THE VALUE OF ULTRA-VIOLET RADIATION IN SURGICAL TUBERCULOSIS.

SIR,—Dr. J. Hunter is reported, on page 567 of the BRITISH MEDICAL JOURNAL (March 26th, 1927), as having said, at a meeting of the Forfarshire Medical Association, held in Dundee on February 16th, that when ultra-violet radiation was used in Dundee "in tubercle of bones, joints, and spine the effects were not good."

Professor Reyn of the Finsen Institute, who has had the greatest experience of actinotherapy, has frequently stated that the results obtained by the application of carbon arc light baths in the treatment of surgical tuberculosis are brilliant; and the published results of the Finsen Institute confirm this statement. Seventy-seven per cent. of the cases of "closed" surgical tuberculosis were cured and 83 per cent. of the cases with sinuses or abscesses.

The cause of these contradictory results is, I think, found in another remark of Dr. Hunter's—that "erythema and pigmentation should not be produced." As Professor Reyn has said, "A poor equipment will give poor results, and so will even the best equipment if the technique be faulty."—I am, etc.,

Newcastle-on-Tyne, March 26th. W. KERR RUSSELL, M.D.

THE MODERN TREATMENT OF HERNIA.

SIR,—Mr. Geoffrey Keynes (March 26th, p. 595) does less than justice to his powers of exposition. His meaning was abundantly clear; I only took leave to doubt, on the strength of the experimental work quoted, whether the union of flap and ligament would be strong enough to prevent the formation of a hernia which would otherwise develop; and I think the question still remains open.

The remarkable case of femoral hernia that he records is most interesting, and illustrates well the elasticity of Gallie's method in meeting all kinds of difficulties in the treatment of hernia. Its bearing on the question of clearing the sac (from above or below) is not so obvious. I should have guessed that it would be easier to free such a sac from above than to deal with the usual type with a narrow neck by the inguinal route. But the case is hardly relevant to the discussion of the routine method of dealing with the sac in ordinary cases. Mr. Keynes distinctly implies in his paper that it should be done from below; I venture to question that, and I think most surgeons who are familiar with the Lotheisen method will agree with me.—I am, etc.,

Brighton, March 29th. M. FITZMAURICE-KELLY.

BILHARZIA OVA AND THE TEST TUBE.

SIR,—In your issue of March 5th (p. 418) Dr. Christopherson stated that I have assailed the statement "that antimony tartrate kills the ova deposited in the tissues during treatment for bilharzia disease."

This statement is incorrect. My article referred to by

him (which was a criticism of Christopherson's previous work) dealt only with the action of tartar emetic *in vitro*, and not with its action on ova inside the body. The experiments described in that paper in 1921 and the conclusions arrived at have been confirmed by other workers. The action of tartar emetic on bilharzia ova in water or saline solution in a test tube has no relation whatever with its action inside the body. The results observed are adequately explained by the physical phenomenon of osmosis. This is not a unique example, for emetine *in vitro* has not the specific action it has on the *Entamoeba histolytica*.—I am, etc.,

March 19th. M. KHALIL, M.D., Ph.D., M.R.C.P.Lond.,
Professor of Parasitology, Faculty of Medicine, Cairo.

Obituary.

DAVID MACEWAN, M.D., LL.D.,

Emeritus Professor of Surgery, University College, Dundee.

DR. DAVID MACEWAN, Emeritus Professor of Surgery in University College, Dundee, died at his residence in that city on March 31st. Professor MacEwan, who was in his eighty-first year, had been in failing health for a considerable time. He was born in Kinross-shire, and was educated at Perth Academy. He received his medical education in the University of Edinburgh, and graduated M.B., C.M. in 1867, and proceeded M.D. in 1880. After graduation he acted as house-surgeon at the Royal Infirmary of Dundee. In 1870 he commenced practice on his own account in that town, and for some time lectured on operative surgery. In 1898 he was appointed professor of surgery in St. Andrews University, a post which he held for twenty-two years, retiring in 1920, when he was succeeded by Professor L. Turton Price. He had already retired, in 1910, from the post of surgeon to Dundee Royal Infirmary, and on that occasion received a handsome testimonial and was entertained at a public dinner. Though he held the position of consulting surgeon to the Infirmary, he resumed active service during the war, operating with all his old skill. After his retirement from the chair the honorary degree of LL.D. was conferred upon him in 1921 by St. Andrews University. He was president of the Dundee Branch of the British Medical Association shortly after its formation, and he delivered the address in surgery at the Annual Meeting in Carlisle in 1896. Respected for his intellectual gifts, Dr. MacEwan was loved for his qualities of heart; his wide sympathy and quiet service endeared him, not only to his patients and students, but also to his colleagues.

He was the author of several contributions to current medical literature, including "A series of abdominal cases," "Treatment of surgical tuberculosis," and "Bier's treatment by venous congestion." He was held in great respect by all classes of the public in Dundee, where he enjoyed a large practice. He had been twice married, and is survived by a widow and by a son of his first marriage.

C. H. WATTS PARKINSON, M.R.C.S., L.S.A.,

Formerly member of the Council of the British Medical Association.

WE regret to record the death of Dr. Charles Henry Watts Parkinson on March 29th, at Wimborne, aged 80. He was the son of the late Dr. Charles Parkinson, who had practised in Wimborne before him. He received his medical education at Guy's Hospital, and obtained the diplomas M.R.C.S.Eng. and L.S.A. in 1869. He afterwards commenced practice in Wimborne, where he was appointed medical officer of health, having obtained the D.P.H.Ed. in 1889. He retired from practice about 1900.

Dr. Watts Parkinson had been an active member of the British Medical Association, and from 1899 to 1902 was joint honorary secretary, with the late Dr. Vawdrey Lush of Weymouth, of the Dorset and West Hants Branch, of which he was president in 1891 and a member of the Branch Council from 1909 to 1913. He was honorary secretary of the Bournemouth Division from 1904 to 1905, vice-chairman in 1907, and chairman in 1908. From 1899 to 1900, and again from 1907-8, he was a member of the Central Council of the Association, and attended its meetings regularly; he had served previously on the Parliamentary Bills Committee.

Dr. Parkinson was for many years coroner for East Dorset; this appointment he held at the time of his death, being then one of the oldest coroners in England. He formerly held a commission in the Volunteers, and was awarded the V.D. Besides these Dr. Parkinson had many other activities: he was a justice of the peace, a member of the Wimborne Board of Guardians since 1903, and the senior member of the governing body of Wimborne Minster. He was also a prominent and much respected Freemason, having taken the deepest interest in the craft for the past fifty-six years. At the time of his death he was Provincial Grand Mark Master of Dorset.

DR. HORACE EYRE HAYNES, who died on March 12th, was born at Evesham in May, 1846, the son of Dr. J. B. Haynes. From Epsom College he went to St. Bartholomew's Hospital. He took the diplomas of M.R.C.S. and L.S.A in 1869, and afterwards joined his father and eldest brother in a very extensive practice. He left Evesham in 1900, and subsequently paid special attention to the treatment of mental cases at a home he established at Brentwood. In 1917 he retired to Brighton, but in 1923 returned to Evesham, where he died. Dr. Haynes took a prominent part in the public affairs of his native town, and was elected mayor of Evesham in 1884 and again in 1885. He showed a keen and practical interest in the old Volunteer movement, was granted a commission in the Worcestershire Volunteers in 1872, received the Volunteer Decoration, and retired after many years' service with the rank of lieutenant-colonel. He was a good rifle shot and won the Licensed Victuallers' Cup in 1875 and the Beauchamp Cup in 1887 and in 1889. He was vice-president of Epsom College and an ex-president of the Worcester Medical Society.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has this week discussed the Landlord and Tenants Bill, the Architects Registration Bill, and other measures, and has also debated problems of unemployment and of British policy in China.

The text of the Trades Disputes and Trade Unions Bill, introduced by the Government, has been issued, and the second reading is to be taken after Easter. The bill, among other objects, proposes to except from the protection of the Trades Disputes Act, 1906, a general strike or sympathetic strike calculated to coerce the Government or intimidate the whole or a substantial part of the community.

On April 5th the Unionist Health and Housing Committee, with Dr. Fremantle presiding, heard from Mr. Sutcliffe and Mr. Barber, representing the Joint Council of Qualified Opticians, a statement of the case for the Optical Practitioners Bill. The Government has appointed a select committee to investigate the same matter.

Bill for the Registration of Nursing Homes.

In the House of Commons, on April 1st, Mrs. Philipson moved the second reading of the Nursing Homes (Registration) Bill. Its principle, she said, had already been approved by a Select Committee, and, as the Committee had recommended, the bill proposed that the local supervising authority should be the county council or the county borough council. Persons carrying on nursing homes were required to apply for registration. In homes already in existence registration would not be refused if the person in charge was unqualified, but the person superintending the actual nursing must be a qualified nurse. The bill proposed to repeal Part II of the Midwives and Maternity Homes Act, 1926, thereby bringing maternity homes within the purview of this general measure. Although inspection was to be by officers of the local authority, the bill contained a proviso designed to prevent inquiry into the medical records of individual patients. Other clauses defined "nursing home" and redefined "qualified nurse." Mr. G. Hurst, in seconding, said that as the law stood at present the words "nursing home" had no legal significance. The abuses in some nursing homes had not been realized by the public before the publication of the report of the Select Committee, but the Select Committee desired that the inspecting officer should be, as in the case of maternity homes, the local medical officer of health, assisted by a qualified nurse to deal with all questions of nursing and a sanitary officer to deal with sanitation. Evidence before the Select Committee had satisfied all its members, including the medical members, that abuses were rife in homes

run by doctors as well as in homes run by unprofessional persons. No doctor of any standing would object to having his home registered. Registration conferred a status, not a stigma.

Mr. A. V. Alexander asked if "nursing home" included "convalescent home."

Mr. Hurst said that if in a convalescent home nursing was given that home would come within the definition.

Sir Douglas Newton moved the rejection of the bill, which would bring undue centralization. Non-county boroughs should not be shut out from its administration. Mr. Harrison seconded. Dr. Drummond Shiels said that until he served on that Select Committee he had not known that a bill of this kind was so much required. What most impressed the Committee was the number of cases of chronic senile poor people who were kept under deplorable conditions. It would be far better that these unfortunate people should be cared for by a public authority. He would seek to have Scotland included in the benefits of the bill. Sir Richard Luce, who had also been a member of the Select Committee, said he had come to the question with an open mind. The evidence given had caused him rapidly to change his views, and he now recommended the bill. When the original bill was projected some two years ago there had been considerable objection from the medical profession, which had not realized the seriousness of the question. The point the profession made of the sanctity of professional secrecy between patient and doctor had been fairly met in the present bill. With the evidence obtained by the Select Committee before them doctors no longer demanded the inclusion of a clause exempting from inspection those homes under the charge of medical practitioners. The bill would bring about a necessity for reasonable co-ordination between maternity and general nursing homes under registration. It would guarantee a reasonable standard of nursing. Proprietors of nursing homes and doctors had given evidence that the supervising authority should be an entirely independent body. The Committee felt that the authority should be wide, with a whole-time officer to do the inspection. He pointed out a drafting defect by which a clause in the bill appeared not to allow patients in maternity cases in nursing homes to be attended by a doctor. He drew attention to the provision that the supervising authority might pass by-laws requiring notification of any death in a nursing home with statement of its cause. He declared that it was not part of the duty of a nursing home to give the cause of death.

Dr. Elliot, speaking for the Government, said it was reasonable that the bill should be read a second time and become law. Differences existed between England and Scotland, and should be recognized by separate legislation. The principle of registration and inspection was accepted on all sides of the House; the question of the powers of non-county boroughs could be further considered in Committee; the recommendation of the Select Committee need not be taken as prejudging the issue. Sir Cyril Cobb, who had been chairman of the Select Committee, said that most cases had to be sent to a nursing home in a sudden emergency by relatives, who had to take the nursing home practically on chance. Dr. Vernon Davies said that the bill would remove a great scandal. Until the Select Committee sat the medical profession as a whole had no idea that inspection and registration of all nursing homes would be required, but after reading the evidence it had no objection to legislation for the inspection of medical men's own homes. Amendments might be moved in Committee to further safeguard the interests of nurses.

The motion for rejection was not pressed, and the bill was read a second time without a division.

Lead Poisoning.

During the discussion of the Civil Estimates, in the House of Commons on March 31st, Mr. Rhys Davies renewed the discussion on the British Government's decision not to ratify the Geneva Convention prohibiting the use of white lead in paint. He referred to the resignation of Sir Thomas Legge from the post of Chief Medical Inspector of Factories at the Home Office in protest against this decision, and congratulated Sir Thomas Legge on his courage. Mr. Rhys reminded the House that fifty operative painters died each year in this country from lead poisoning through the use of white lead in paint, and 200 were always suffering from lead poisoning. He protested that the Government had, through the India Office, invited the Bombay Government to "torpedo" the White Lead Convention in India. Replying for the Government, Captain D. King said Sir Thomas Legge had reached the pensionable age nearly four years before resigning. There was no obligation on the British or on any other Government to ratify the draft Convention. Since the Government had issued regulations governing the use of white lead paints, these regulations had been accepted by the appropriate trade joint council with very small alterations which would be adopted by the Home Office. Mr. Wallhead said that as a practical man he did not think the regulations could be made effective.

Refacing the Houses of Parliament: Sandstone and Silicosis.

On a vote for expenditure on the buildings of the Houses of Parliament, which was carried by the House of Commons on March 31st, Captain King explained that £20,000 was asked for the repair of the stonework. On expert advice the repairs were to be executed in Stancliffe stone. Mr. Gardner objected. He said this stone came from Darley Dale. The Office of Works paid an extra sum per hour to men working in that kind of material because of the danger involved. Sir Thomas Legge had written that the quarrying and dressing of sandstone in Derbyshire, Yorkshire, and round Edinburgh had cost a multitude of lives. In Derbyshire the death rate from phthisis was high in the sandstone areas, low in the limestone. Mr. Gardner said that according to an inquiry by the medical officer of the Derbyshire County Council, the death rate per 1,000 in the years 1901 to 1910 in the areas from which this stone came was 13.7 from phthisis among 124 gritstone workers. Among 426 stone workers, some in gritstone, some in limestone, in the two Matlocks and the two Darleys the death rate was 7 per 1,000. Among persons employed in and about limestone quarries and works it was 1.71 per 1,000, among limestone workers 1.52, and among persons employed in and about coal mines in the same district 0.68 per 1,000. The standard phthisis death rate was 0.77 per 1,000, and the death rate among Portland stone masons was 1.4 per 1,000. Dr. Brown, a medical officer of the Home Office, had reported that silicosis advanced by slow stages, and the men affected appeared to be unchanged, but ultimately they died very quickly of it. Mr. Gardner declared that the pneumatic tool expedited the disease. Portland stone was now being used for building even in sandstone areas. Lord Hartington thought Mr. Gardner had slightly exaggerated the risk to the workers in gritstone. Captain King said that to reface the Houses with Portland stone would cost over £3,500,000. Sandstone quarry owners in Derby had decided in 1922 to have all their operatives examined by the medical officers of health. Of 291 operatives, 5 were found to be suffering from silicosis and 7 from lung diseases; 84 of the men were between 40 and 49 years of age; 51 between 50 and 59; 21 were 60 years or over. The medical officer of health for the North Darley Urban District also supplied figures showing that in 1919 the death rate from phthisis was 0.34, and the only death from phthisis was that of a woman. Captain King admitted that silicosis existed among workers in sandstone. The Office of Works and Home Office had carefully considered that point and intended to take every possible precaution to secure the health of those who worked on this stone by damping the stone and in other ways. The workshops to be erected within the precincts of the Palace of Westminster would have roofs which could be opened completely in fine weather. Dr. Vernon Davies said Mr. Gardner was confusing the work of the mason with that of the quarryman. There was no danger to any mason who used stone of this description, either in preparing it for building or in building.

Colonel Lane-Fox, replying to Dr. Vernon Davies, on April 5th, said that silicosis was not, in general, a disease which it was required to report. Detailed information could not therefore be given as to the number of cases among stone workers for the last three years for which statistics were available, or as to the number of deaths, or the number of cases which developed pulmonary tuberculosis and died therefrom. The kinds of stone most liable to produce silicosis were the more siliceous sandstones and granite. More information would be available on this point when the results of a medical inquiry into the dust danger among workers in sandstone, which had been instituted by the Home Secretary, were known. The Mines Department was collaborating in this inquiry. Before deciding whether silicosis should be scheduled as an industrial disease the Government must have the report.

Another Mental Deficiency Bill.—The Mental Deficiency (No. 2) Bill, presented by Mr. Rhys Davies, incorporates the Labour party proposals for amendment of the Mental Deficiency Act, 1913. It proposes to redefine idiots, imbeciles, feeble-minded persons, and moral defectives, inserting in each case the limitation "from birth or from an early age, or in consequence of physical injury or sunstroke or encephalitis lethargica." In the case of persons under 14, "that they by reason of such defectiveness appear to be incapable of receiving proper benefit from the instruction in ordinary schools" is added as a reason for classification as feeble-minded, in addition to "that they require care and supervision for their own protection or for the protection of others." Additional safeguards are proposed on the placing and retention of defectives in homes or institutions. A clause, which is said to be in accordance with the recommendations of the Royal Commission on Lunacy, proposes to dissolve the Board of Control for the purposes of the enactments relating to lunacy as well as for the purposes of those relating to mental deficiency, and to set up a new board. This is to consist of a chairman appointed by the Home Secretary, one legal commissioner, one medical commissioner of either sex, appointed by the Home Secretary, and one female commissioner. The Home Secretary is to have power to appoint two medical commissioners instead of one. Of fifteen assistant commissioners five are to be medical. (It may be found that a clause proposing to alter the Lunacy Acts is out of order in a bill whose title restricts it to mental deficiency.) The bill proposes that where mechanical means of bodily restraint are applied to a defective in an institution or certified house a certificate signed by a qualified medical practitioner, describing the means used and why, shall be forwarded to the Board, any restraint otherwise applied to be a misdemeanour. Many minor amendments are proposed in the principal Act.

Young Offenders.—The report of the Departmental Committee on the Treatment of Young Offenders has been issued. The Committee recommends that immediate steps should be taken to deal with the serious lack of accommodation for mental defectives; that the Mental Deficiency Act, 1913, should be amended to remove the difficulty caused by the words "from birth or from an early age" (a bill proposing this is now awaiting report in the House of Commons), and that persons suffering from the after-effects of encephalitis lethargica should not be dealt with as criminals, but placed in suitable institutions as subjects for medical care. The bill also recommends that the juvenile court should have jurisdiction to deal with all offences, except homicide, committed by persons under 17. No child under 8 should be charged with any offence. Much better facilities, it is considered, are required for the examination and observation of young offenders under 21, in order to estimate personal factors, especially mental and

physical health. The Committee remarks that the increase in encephalitis lethargica has emphasized the need for careful examination. "All the resources of approved medical science in relation to the functions of the mind should be available under any system of observation." The Committee states that in existing places of detention for persons under 16 little is done in the way of special medical examination. In many cases the juvenile courts have no regular way of ensuring medical examinations. At least three observation centres or central remand homes should be provided by the State. There should be a medical examination in all cases in which it is proposed to inflict whipping, but the courts should be able to order a whipping for any serious offence committed by a boy under 17. (Three members of the Committee dissent from this last recommendation.) Imprisonment should be abolished for young persons between 16 and 17, except where a certificate of unruliness or depravity is given. The distinction between reformatory and industrial schools should be abolished. Sentence of death should not be passed on any person under the age of 18. Recommendations are made for after-care and for dealing with cases of neglect.

Vaccination.—On April 4th Mr. Groves asked the Minister of Health whether he was aware that the medical officer of health for Southport received a letter from the Ministry of Health stating that the severity of the vaccination reaction reported from Southport had been noticed in other districts, and appeared to be caused more by the technqiue used in vaccinating than by the virulence of the vaccine lymph, and suggesting that a single incision four-fifths of a centimetre long should be made and no criss-cross incision. Sir K. Wood replied that the Minister was aware that a letter was written by a medical officer of the Ministry (after having made a local inspection) to the medical officer of health for Southport, generally on the lines set out in the question, except that it was made clear that four marks should be made, each by a single line incision, not four-fifths of a centimetre, but 4 to 5 millimetres long. The official view of the department was set out in the instructions to vaccinators under contract, and the suggestions made in the letter were consistent with that view.

Notes in Brief.

On April 4th Earl Winterton informed Mr. Lansbury that the Indian Lepers Act provided that compulsory segregation of pauper lepers might be enforced in areas to which the Act was made applicable by the local provincial government. He understood that there were dispensaries in many places for the treatment of early cases of the disease.

Mr. Chamberlain, on April 4th, stated that he was considering whether a public inquiry should be held into the report of the special committee by the board of guardians on the Swaffield Road Institution, Wandsworth, as to the alleged maladministration of the infirmary wards.

In the twelve months ended February last about 2,000 war pensioners with below-knee amputations had been fitted with metal limbs. At one of the largest limb-fitting centres more complaints were received from pensioners wearing the metal limb than from those wearing the wooden type.

The Minister of Health has given provisional figures showing that 27 men and 61 women over 100 years of age died in England and Wales between 1922 and 1926.

During the twelve months ended last February 22 men and 4 women died from natural causes when under detention in prisons in England and Wales.

Veterinary staffs in countries under the Colonial Office were increased in 1926 as follows: Nigeria 2, Sierra Leone 1, Kenya 2, Tanganyika 2, Bechuanaland 3, Straits Settlements and Federated Malay States 2, Fiji 1.

Within the area of the Surrey Local Education Authority in 1926 were 259 ascertained educable mentally defective children. Of these, 41 were at special schools, 133 at public elementary schools, and 3 at other institutions.

The last revision of the medical scales for merchant ships was issued in 1924.

Medico-Legal.

LUNACY CERTIFICATION.

De Freville v. *Dill.*

IN the King's Bench Division on March 29th, before Mr. Justice Avory and a special jury, the hearing was begun of an action in which Mrs. May de Freville, the wife of Mr. G. P. H. de Freville, claimed damages for alleged negligence in certifying her to be insane on June 9th, 1926, from Dr. A. V. Dill, a medical practitioner, of Stroud.

The defendant pleaded the protection of Section 330 of the Lunacy Act, 1890, as he signed the certificate in good faith and acted with reasonable care; his conclusions regarding the plaintiff's condition at the time he certified her were correct.

The Plaintiff's Case.

Mr. Cremlyn, in opening the plaintiff's case, said she married in 1917, and lived with her husband in London for nearly twelve months, and in 1918 a son was born. The marriage became very unhappy because her husband did not like children. In 1922 the company of which her husband was manager failed, and the only home he could offer her was Oakridge Vicarage, near Stroud, the residence of his father, the Rev. F. de Freville, who had vehemently objected to the marriage. On May 29th, 1926, the plaintiff visited her own father at Wokingham, appearing then as normal as she had always been. On June 7th she saw her brother in London; on June 9th she discussed her affairs with a Stroud solicitor. On May 11th she saw the defendant, Dr. Dill, for the first time. She had just "told her husband what she thought of him," and his mother rang up Dr. Dill, who, without any introduction, entered the bedroom where she was packing, preparatory to leaving the house. Dr. Dill then suggested to her that she was very excited, but she denied this and said she was leaving because of her husband. On May 15th her husband called on Dr. Dill and consulted him about her "periodic attacks of excitement," but Dr. Dill then said she was not certifiable and suggested she should become a voluntary boarder in a mental institution. On June 9th, after seeing the solicitor, she returned to the vicarage and went into the library, where she saw her husband, her father-in-law, and her son. The boy ran to her, but the vicar snatched him away and the child was removed from the room. Then the vicar said to his son: "Put her out," and the plaintiff became very angry, and, possibly, excited. Her husband seized her and threw her out of the front door; she tried to get back through a French window, but a sister-in-law slammed the window in her face, breaking the glass. She then got into the servants' hall, but the vicar locked the door leading to the kitchen. Eventually she heard the vicar telephoning to Dr. Dill to come immediately because she was "in a great state of excitement." Dr. Dill saw her alone in the servants' hall; she told him that all she wanted was to see her son and that she would then leave the house. Dr. Dill and her husband's family then had a consultation, which she interrupted, and there was a scene. Dr. Dill telephoned to the relieving officer, who came to the vicarage, and a little later a policeman took her to the Gloucester County Asylum. On the way they visited the house of a magistrate, who signed a summary reception order. Counsel urged that none of what took place on that night was strictly authorized by any section of the Lunacy Act, 1890. The following morning the plaintiff was seen by two other doctors, who stated that she was not of unsound mind. Dr. Dill's certificate said that Mrs. de Freville was very excited, talked wildly, threatened to kill her husband, refused food, would not sit down, insisted on seeing her son, although the child cried and obviously did not want to see her, and was in a state of acute mania.

The plaintiff, in evidence, said she might have been excited, but the other statements were untrue. Her child was not in the room when the doctor was at the house. The certificate also stated that she had ordered goods without reason or authority, and had had the bills sent to her mother-in-law. In ordering these goods, witness said she was acting on her solicitor's advice to order such clothes as she thought necessary and to send the bills to her husband.

Cross-examined by Mr. Singleton, K.C., the witness agreed that she had begun an action against her father-in-law alleging false imprisonment, though she admitted that he had been very kind. About eighteen months before June, 1926, she summoned her husband for desertion. A letter from her husband to her father, dated June 4th, 1926, in which he referred to her as "one who is so good at heart when she is herself," was only partly sincere. She denied the suggestion that before Dr. Dill came she rushed at her father-in-law shouting that she would kill him, or that she struck the vicar in the eye with her clenched fist. She did not attack her husband and tear his coat. She agreed that they were always unhappy at the vicarage.

Asked why Dr. Dill, who had only seen her once before, should certify her unless he believed her to be of unsound mind, she replied that it was because her husband wanted to get rid of her. This was a conspiracy between her husband, his father, his invalid mother, and the doctor—his mother mostly.

Mrs. de Freville denied that she threatened to protest in her father-in-law's church if he tried to preach. She agreed that for four years the vicar provided the means for her and her husband and her child to live. She denied saying, on June 9th, 1926, if she had a revolver she would "shoot them all," or that if she had a knife she would "cut all their throats." She never told her sister-in-law that she had most terrible nightmares, or that she thought of committing suicide. She never threatened to throw her son under a tramcar; such a suggestion was false and horrible. She never assaulted the vicar, although she admitted having been bound over on that charge.

Evidence on behalf of the plaintiff was given by Mr. R. E. Stuart, solicitor, of Stroud; Miss Warner, matron of the Gloucester County Mental Hospital; Miss Hunter, nurse at the hospital; Dr. John Marnan, medical superintendent of the County Asylum, Gloucester; Dr. Thomas C. Smith, senior medical officer at the Second County Mental Hospital, Barnwood, Gloucester; Mrs. Sleep, the plaintiff's sister; Mr. P. A. G. Bishop, the relieving officer at Stroud; Dr. T. B. Hyslop, and Dr. J. Risien Russell.

Both Dr. Marnan and Dr. Smith, in evidence, said when they examined the plaintiff on June 10th she was quiet and mentally normal. If she had been in a state of acute mania at 10.30 on the previous night they would hardly have expected her to be in the condition in which they found her the following morning.

Mr. Bishop, in his evidence, said he was called to the vicarage by Dr. Dill on June 9th. Dr. Dill filled up and signed the medical certificate on the statutory form, and the witness filled up the statement of particulars, obtaining some from the husband and some from Dr. Dill. When he was about half-way through the filling up of the form the plaintiff came in very excited, talking and throwing her arms about. She came over to the witness with her arms in the air and asked who he was and what he was doing there, and ordered him out of the house. She said she had come down for her child whom the family had refused to allow her to see. She kept on talking and shouting in the library, and Dr. Dill and the witness went into the hall to complete the form. Mrs. de Freville refused to come with him, and therefore a policeman and the witness took her by the

arms and Dr. Dill saw them into the car. They called at the house of Mr. Aldridge, a magistrate, and he signed a reception order. The magistrate did not have a chance to talk to the plaintiff as she was talking all the time. Cross-examined, the witness said that when he saw Mrs. de Freville he formed the opinion that she was temporarily of unsound mind. She became quieter on the journey.

Dr. Hyslop said he saw the plaintiff on March 2nd and March 7th, 1927, and she gave a rational, coherent, and calm explanation of the circumstances giving rise to the allegations. He did not think that the certificate was a proper one to make. "I should have adopted the same course as the persons at Gloucester Mental Hospital and said she was unjustly detained and not a proper person to be kept under care and treatment." In reply to Mr. Singleton, who asked if a doctor found a patient raving, if in his presence she assaulted one or more persons and threatened to kill one or more persons, was it not his duty to send for the police and the relieving officer? the witness said "No; he should send for nursing aid and treat the patient on the premises if possible to prevent her being sent to an asylum, and ascertain whether the condition is evanescent. It is a doctor's duty not to be precipitate in these cases."

Dr. Risien Russell, in his evidence, said that facts communicated by others should not be used without confronting the patient with the persons making the statements. The statement as to refusing food was untrue, and it was therefore a false certificate. Cross-examined, Dr. Russell said that he knew of no state of insanity lasting only a few hours.

Case for the Defence Opened.

Mr. Singleton, in opening the case for Dr. Dill, said no one would be more pleased than the defendant and his adivsers if they could believe that the plaintiff was now and would remain sane. The jury had not to try whether the plaintiff was sane now, nor even whether she was sane on June 9th, 1926.

Dr. Dill, in his evidence, said both the vicar and his wife had been his patients. He first saw the plaintiff on May 11th, 1926, when he was called to the vicarage. She told him things were quite impossible at the vicarage, and she was packing to leave. She refused treatment, and said that she was sorry he had been sent for. He had been told that the plaintiff had had a row with her husband. The husband came to see the witness, and told him that she had attacks about once a month, and seemed to be getting worse. The husband said that she had thrown a knife at him, and had threatened to throw her child under a tramcar. On June 9th he went to the vicarage in response to an urgent telephone call. The plaintiff was in the servants' hall, walking up and down in a very excited state, with a blood-stained handkerchief tied round her wrist. She talked excitedly, and did not wait to answer his questions. She wanted to see her son and to go into the village to get a bed. She said she did not know when she had had food last. She then had a cup of tea, and he got her to take a tablet on the understanding that she should see her son. When the vicar came in she said: "There you are, you holy man," and added that if he tried to preach next Sunday she would certainly get up and protest. The vicar then showed the witness his eye, which had a small bruise on the eyeball. The witness did not think it desirable that the plaintiff should see her son or take him away. In the witness's presence the plaintiff struck Miss de Freville in the face with her closed fist, and he heard her exclaim to her husband, "My God! I could kill you." Witness decided that it was undesirable that the plaintiff should remain at the vicarage, both for her own sake and also for the sake of the other people who were in the house, for he did not know to what extent she would go on injuring, or attempting to injure, others, including her own child.

Cross-examined, Dr. Dill said he never asked Mrs. de Freville whether her husband's statements about her were true. He had no opportunity; she could not answer even simple questions. Asked why it was necessary to send Mrs. de Freville into an asylum to get her away from the environment of the vicarage, he said he saw no other alternative. He watched the plaintiff thoroughly for five hours, and her actions were entirely consistent with unsoundness of mind.

Counsel: Can you refer me to any textbook which says, as you have, that acute mania is liable to clear up very rapidly?—I am not conversant with the textbooks. It is eleven years since I qualified.

You have told us that you are a general practitioner with little experience in mental cases, and you say that it was not necessary to take a second opinion?—It was sufficiently obvious to me what she was suffering from.

Was she suffering from acute mania?—As I meant it.

Was she suffering from acute mania as that term is known to the medical profession?—Possibly not.

The Jury Discharged.

At this stage of the case the jury informed the judge that they had arrived at a conclusion adverse to Dr. Dill, and asked whether they could stop the case.

Mr. Justice Avory said the jury had come to a premature determination adverse to Dr. Dill without hearing the end of his evidence, and also most material evidence that was to have been tendered on his behalf. Unless Dr. Dill was prepared to submit to judgement, the proper course was to discharge the jury from giving a verdict.

Mr. Singleton said Dr. Dill could not consent to judgement, as the evidence of the witnesses who would have been called from the vicarage was as important as, if not more important than, Dr. Dill's evidence.

Mr. Justice Avory: I shall take the responsibility of discharging the jury without giving a verdict.

The jury were, accordingly, discharged.

Universities and Colleges.

UNIVERSITY OF LONDON.

Delay in Registration after Passing Qualifying Examination.

ON January 29th (p. 213) we published a letter from "Senior" stating that a young practitioner whose name appeared on the pass list of the London M.B., B.S. on December 8th, having forwarded a fee for registration to the General Medical Council on the following day, found later on that he could not be registered until January 26th—that is, seven weeks after the publication of the list and after complying with what was required. Having on January 16th given a death certificate he was informed by the General Medical Council that his degrees could not be registered because the University of London had not sent the necessary information to the General Medical Council. We communicated with the Registrar of the General Medical Council, who informed us that representations had already been made to the University authorities, but he was good enough to take the matter up again and to enlist the interest of the representative of the University of London on the Council; by his efforts a new ordinance has been passed as follows:

> That the Vice-Chancellor be empowered to attach on behalf of the Senate the seal of the University to the pass list of the M.B., B.S. Examination for Internal and External Students after the lapse of a fortnight from the date of the examiners' meeting in cases where the pass list cannot be approved by the Senate within that period; and that this be deemed to be a case of urgency within the meaning of Standing Order No. 134

Consequently it may be hoped that the hardship to which attention has been called will not arise in future.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—*Pathology and Bacteriology; Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence:* M. J. Arnott, T. L. Kelly, H. D. Ord. *Pathology and Bacteriology; Materia Medica, Pharmacology, General Principles of Therapeutics, and Pharmacy; Public Health; Medical Jurisprudence:* *C. Goldstein, *J. M. Tait, *H. G. Ungley, H. M. Brown, D. S. Buchanan, W. C. E. Diamond.

* With second-class honours.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

DIPLOMA IN TROPICAL MEDICINE.—C. P. Allen, M. L. Bahl, B. Barrowman, J. D. Bilimoria, W. M. Burns, E. J. Daly, G. A. Dunlop, V. Dyream, M. Farid, *A. M. Gillespie, S. A. Gunawardana, J. Harkness, R. Hay, N. M. Hodivala, Emma Hughes, Kathleen M Hyslop, R. E. Ingram-Johnson, J. S. Kapadia, J. Macdonald, R. S. McElroy, W. S. Maclay, H. G. Maguire, A. F. Mahaffy, A. H. Malhotra, H. L. Malhotra, B. S. Manghirmalani, J. N. Mehra, A. J. Murray, H. M. Nevin, N. T. Olusoga, D. B. Parakh, M. R Peters, *R. S. Rao, S. R. A. Shah, J. F. Southward, Frances C. Thompson, B. J. van de S. de Villiers, R. Walkinshaw.

DIPLOMA IN TROPICAL HYGIENE.—T. A. Austin, B. Barrowman, W. W. Besson, J. C. St.G. Earl, J. Hamilton, C F. McCon, Winifred H. Mitchell, R. Nixon, W. S. Ormiston, A. Robertson.

* Recommended for the Milne medal.

UNIVERSITY OF MANCHESTER.

T. N. FISHER, M.B., Ch.B., has been approved at the examination for the certificate in school hygiene.

The following awards have been made: Dauntesey Medical Junior Scholarships: (1) C. H. T. Wade, (2) R. V. Wright and Florence Nightingale divided. Sidney Renshaw Prize in Physiology: M. C. G. Israels and W. W. Kay divided.

UNIVERSITY OF DUBLIN.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., PART I.—*Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology:* D. S. P. Wilson, H. S. Smithwick, A. G. C. Ffolliott, K. Watson, W. Crawford, R. I. G. Reid, F. R. Falkiner, J. E. M'Mahon, P. A. Thornton, W. I. Chapman. *(In completion)* J. A. Dowds, I. le Roux, E. du P. Meiring, J. E. Wells.

PART II.—*Medicine:* *R. A. Q. O'Meara, M. Gerber, W. F. Lane, M. F. N. Griffin, R. W. T. H. Stewart, R. S. F. Hennessey, G. S. Smyth, R. D. Whiteacre, C. F. Cope, P. Brangan, S. D. K. Roberts, G. O. Taylor, E. A. Ellis, C. L. Day, N. J. U. Mather, M. Sherowitz, S. B. Dalrymple, S. R. Elmes, M. G. J. Booysen, Norah W. Brown, W. F. Knobel, C. de W. Meintjes, A. C. C. Charles, D. M'M. Carson, H. C. Weir. *Surgery:* S. Behr, G. O. Taylor, G. S. Smyth, S. Gurevich, P. M. Garry, G. D. Edwards, M. G. J. Booysen, M. Sherowitz, R. C. U. Warrington. *Midwifery:* *P. M. Garry, *E. M. Gamble, T. J. Millin, M. Gerber, R. M. Moore, J. R. Hanna, H. Dundon, J. M. M'Elligott, I. F. Ratthaus, I. le Roux.

D.P.H., PART I.—*Chemistry; Bacteriology and Parasitology; Physics, Meteorology, and Climatology*: M. Halligan, Brenda M. Young, Sarah M. Coghlan, J. V. M'Nally, Kathleen M. Ball, Kathleen M. Kennedy, Margaret E. Pedlow.

PART II.—*Sanitation (including Sanitary Construction); Public Health Administration; Hygiene and Epidemiology; Sanitary Law and Vital Statistics*: Anna M. Allen.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—Anne Siret, P. Mehta.

* Passed on high marks.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting, held on April 1st, the President admitted the following candidates, who had been successful at the spring final examination under the conjoint scheme for Ireland, to the licenses in Medicine and Midwifery of the Royal College of Physicians of Ireland:

W. Burgess, E. P. Carroll, Bridget Crawford, A. Fung, A. F. E. Harbord, C. P. Hearty, J. Kenny, W. G. Myers, A. P. McEvilly-Jordan, J. F. McGeough, P. O'Callaghan, Philomena T. M. Pierse, T. Simpson, H. T. G. Westropp, D. P. Rudstein.

THE following candidates, possessing British qualifications, were approved for the M.D. degree at the University of Lausanne during the winter session just ended: S. S. Bhatnagar, H. N. Warner Collins, Gladys H. Marchant.

Medical News.

A POST-GRADUATE course for general practitioners will be conducted by the staff at the James Mackenzie Institute for Clinical Research, St. Andrews, from June 14th to 28th. It will bear on the recognition and treatment of the early stages of disease. Lantern demonstrations will be given by the honorary director and members of the clinical staff, anatomical demonstrations by Dr. Kirkpatrick, physiological lectures and demonstrations by Professor Herring, and chemical demonstrations by Dr. Hynd; Dr. Matthew Fyfe will deal with clinical pathology and Mr. Smith with radiology. Clinical lectures will be given at the Dundee Royal Infirmary, when Professor Patrick and Professor Price will deal with surgical and medical subjects respectively. The fee for the course is £5 5s. Further information can be obtained from the Secretary of the institute.

THE Fellowship of Medicine announces that owing to the Easter vacation the special courses in April will not start until the end of the month. A three-weeks' course in medicine, surgery, and gynaecology at the Royal Waterloo Hospital for Children and Women commences on April 25th. On April 26th will be given the first of eight clinical demonstrations on tropical diseases, on Tuesdays and Thursdays at 2 p.m., at the London School of Hygiene and Tropical Medicine. Four lecture demonstrations on electro-therapy will be given by Dr. C. B. Heald at the Royal Free Hospital on Wednesdays at 5.15 p.m., beginning on April 27th. Copies of all syllabuses, the general course programme, and the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

AT a meeting of the Medical Society of London, held on March 28th, the following were elected honorary Fellows: Professor Irving Cameron (Canada), Professor Sir Charles Sherrington (Oxford), Professor H. C. Jacobaeus (Stockholm), Professor K. F. Wenckebach (Vienna).

SIR CHARLES SHERRINGTON, G.B.E., O.M., M.D., F.R.S., Sir Henry Head, M.D., F.R.S., Sir George Newman, K.C.B., M.D., and Professor C. J. Martin, M.D., F.R.S., have recently been elected Fellows of the New York Academy of Medicine.

THE Savill (Memorial) Oration of the West End Hospital for Nervous Diseases will be delivered in the house of the Royal Society of Medicine by Dr. Gordon Holmes on Thursday, April 21st, at 5 p.m. The subject is local epilepsy, and the chair will be taken by Dr. Percy Smith. Members of the profession and medical students are invited to attend. The Savill prize (offered biennially, value £15) will be awarded at the end of this year; full particulars can be obtained from the secretary at the hospital (Welbeck Street, W.1.)

THE annual meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, Cavendish Square, W.1, to-day (Friday, April 8th), at 5 p.m.

SIR JAMES BERRY, President of the Royal Society of Medicine, has been elected a member of the Athenaeum Club under the provisions of Rule II of the club, which empowers the annual election of a certain number of persons of distinguished eminence in science, literature, the arts, or for public service.

THE house and library of the Royal Society of Medicine will be closed from Thursday, April 14th, to Tuesday, April 19th, both days inclusive.

THE Robert Jones medal and prize offered by the British Orthopaedic Association for 1926 has not been awarded.

AT St. Thomas's Hospital at noon, on April 26th, the St. Thomas's House (a residential club for students) will be opened and a war memorial unveiled by the Archbishop of Canterbury.

HELP was given to nearly 500 mothers and children by the National League for Health, Maternity and Child Welfare during 1926, and the annual report contains details of many emergencies overcome. Although the annual expenditure is approximately £5,000, the annual subscriptions are under £600, the balance being obtained from the activities of the society, which are largely self-supporting. Holidays and convalescent treatment were provided for many mothers and children and several health lectures were delivered, the physical training cinematograph film prepared by the league proving very popular. Over 429,000 copies of publications by the league were distributed, with considerable benefit to its finance.

A NEW edition has been issued of the *Handbook of the American Medical Association of Vienna*. This contains information about various facilities for medical post-graduate work in this city, and will be found very useful by all proposing to study there. It may be obtained free of charge from Dr. A. I. Haskell, VIII, Alserstrasse 9, Vienna, Austria.

THE second international course in gynaecology and cardiology at Franzensbad will be held from May 22nd to 26th, 1927.

DURING the celebration in 1930 of the French occupation of Algiers an international congress on malaria will be held, when the discovery of the parasite of malaria by Laveran at Algiers in 1880 will be commemorated.

THREE congresses at Vienna this year will deal respectively with psychiatry, microbiology, and neurology. At the first, from April 21st to 23rd, the programme will include the psychology of schizophrenia and the care of psychopathic patients. The secretary is Dr. G. J. Ilberg, Sonnenstein, Pirna, Saxony. At the second conference, from June 7th to 9th, the subjects will be experimental cancer and protective inoculation; further information may be obtained from Professor R. Kraus, Zimmermanngasse 3, Vienna IX. The third conference, from September 15th to 17th, will include a discussion on the anatomy, physiology, and pathology of the sensory nervous system. Inquiries should be addressed to Dr. K. Mendel, Augsburgstrasse 43, Berlin.

THE centenary of the birth of Vulpian will be celebrated in Paris at the same time as that of the death of Pinel, on the occasion of the annual meeting of the Société de Biologie and the eighth international neurological congress (May 27th to June 2nd). Further information can be obtained from Dr. H. Colin, 22, Rue Gay-Lussac, Paris V°.

PROFESSOR JULES BORDET, director of the Institut Pasteur at Brussels, has been nominated a corresponding member of the Royal Academy of Spain.

THE population of Italy has increased from 25 million in 1862 to 42 million in 1926 in spite of the losses caused by earthquakes, influenza, war, and the fall of the birth rate. The average duration of life has risen to 53, and the mortality, which was 30 per 10,000 in 1880, has fallen to 16 per 10,000.

ACCORDING to recent statistics, the number of insane persons in different parts of Italy is 59,393, or 1.5 per cent. of the population.

THE medical faculty of Freiburg University has conferred the distinction of doctor *honoris causa* on Tatsukichi Irisawa, professor of internal medicine at Tokyo and one of Naunyn's former pupils.

THE following changes have recently occurred in the German medical faculties: Professor G. von Bergmann has succeeded Professor Kraus in the chair of internal medicine at Berlin; Dr. Franz Volhard, professor of internal medicine at Halle, has succeeded Professor von Bergmann in the corresponding chair at Frankfort; Professor Hans Wintersten has succeeded Professor Karl Hürthle in the chair of physiology at Rostock; and Professor Otto Pankow has succeeded Professor Opitz in the chair of obstetrics and gynaecology at Düsseldorf.

PROFESSOR EMILE DE GRÓSZ has been appointed president of the committee on post-graduate study in Hungary, Professor Cornelius de Scholtz vice-president, and Dr. Béla Johan secretary. During 1926 ten post-graduate courses were arranged in Budapest, Szeged, and Debreczen, and eight numbers of a periodical devoted to medical education were published.

AN anonymous donor has put the sum of 100,000 francs at the disposal of the Société de Neurologie of Paris to be awarded to the discoverer in the course of the next two years of a certain cure for disseminated sclerosis. Candidates must be members of the Société de Neurologie or at least of French nationality.

THE late Dr. T. Claye Shaw, who died at Cheltenham in January last, left estate valued at £53,854.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

DR. JEANIE MACRAE (Mallaig, Inverness-shire) asks for suggestions for the treatment of a patient who is suffering from hyperplesia (blood pressure 170–180), accompanied by excessive secretion of frothy saliva. The nose is blocked, and this necessitates continual spitting, particularly during a continued conversation.

MORBID SHYNESS IN A CHILD

"E. C. M." writes: I would suggest to "K. H. G." to invite other children into the house—one, two, or more—say, twice daily, and talk and play with them naturally, disregarding completely the child's existence during these times. No attempt should be made to include her and not the slightest notice taken of her shy habits. I believe that gradually the child will venture to join in on her own account. The mother's anxiety is reflected in the child's inability to do what is expected of her.

DR. B. E. COOK (Doncaster) writes in reply to "K. H. G.": May I recommend him to read Cameron on *The Nervous Child?* I would suggest that if the child's mother were to see a medico-psychologist (such as the one whose address is reported in the JOURNAL for March 26th on page 582) she would probably receive the necessary help in what is, after all, a problem for the home rather than the surgery.

"HONG-KONG DOG."

"M.D." asks for information about the disease colloquially called "Hong-Kong dog."

*** "Hong-Kong dog" is the local name given to a diarrhoeic condition which attacks most newcomers to Hong-Kong shortly after their arrival. It was formerly attributed to alcoholic indulgence, but this is definitely not the case. It is most common in the earlier months of the year, and may recur year after year, and in some, fortunately few, instances, after a succession of such attacks, the condition does not clear up, but seems to pass imperceptibly into true sprue.

LETTERS, NOTES, ETC.

THE UREA CONCENTRATION TEST IN NEPHRITIS.

DR. J. BARKER SMITH (London, S.E.) writes: The authors of the article in the BRITISH MEDICAL JOURNAL of January 8th (p. 51) have given a valuable and simple test for ascertaining renal function. But I am somewhat puzzled that the mere percentage of urea should mean so much. The technique mentioned there is to me somewhat obscure. My difficulty in understanding and suspicion, however, arise in the most simple, and therefore most valuable, statement under section (*a*) at the end of the article: "An analysis of the urea content of a series of specimens of ordinary urine. If these show an adequate urea percentage, then obviously a urea concentration test is not necessary." It seems to me that "adequate urea percentage" is left to the personal experience of the reader for interpretation. In the absence of estimating the day's output of urea we are compelled to consider "adequate" the amount of urea relatively to the specific gravity of the sample passed. I find in the examination of some hundreds of samples of urine, excluding those which are albuminous or saccharine, that the output of urea approximates, or is *en rapport* with, the specific gravity of the urine. So for other ordinary constituents of urine. If we make a ratio of the urea per thousand by multiplying by a hundred and dividing by the two last figures of the specific gravity the quotients or ratios would approximate for samples from sp. gr. 1010 to 1030—say a ratio about 70. I should be very sorry for this valuable article to be passed over because of any obscurity and not put into practice.

DR. ARCHIBALD CAMERON.

"H. G." writes: There are degrees in everything, even in treason, and had Dr. Cameron been content, as most of his fellow rebels were, to accept the verdict of "Drumossie," he might have returned in due course to his native land and ended his days in peace. But, as "Nomadic Doctor" properly states, he went about his "royal master's business," and it is important to know what that business was. It was neither more nor less than the kidnapping of the Royal Family, for that is what the Elibank conspiracy aimed at. The Government had full knowledge of this, but thought best not to make it public—probably from the desire to avoid shedding more blood. Hence the ignorance prevailing up to recent times of the true reason for the execution of Dr. Cameron.

WIRELESS MEDICAL CONSULTATIONS AT SEA.

DR. W. H. BROAD (Liverpool) writes in reply to Dr. D. D. F. Macintyre's invitation for suggestions (JOURNAL, March 12th, p. 493) to be embodied in the new edition of the *Ship Captain's Medical Guide*: As a preliminary measure might I suggest that the items in Scale III be numbered? The general consideration of the whole subject is one which will require much discussion and cannot for a moment be so summarily treated as suggested by Dr. F. F. Bond in his letter of March 14th (BRITISH MEDICAL JOURNAL, March 19th, p. 542).

LONGEVITY IN A FAMILY.

A MEMBER of the South Australian Branch of the British Medical Association (Adelaide) refers to recent notes on unusual family longevity (JOURNAL, 1926, vol. ii, pp. 236 and 365), and states that his wife's grandparents, who were pioneers of South Australia, had eleven children; two out of three who died were then 81 and 64, while eight are living, their present ages being 86, 83, 82, 80, 76, 74, 71, and 67. Six of these, who reside in South Australia, regularly visit an aunt, who is just reaching her 100th birthday. This aunt landed in South Australia on December 28th, 1836, the day it was proclaimed a British province. She is a great reader and corresponds with many friends, taking a keen interest in all that is going on. She was the youngest of a family of nine. Two brothers met with accidental deaths; one sister died at the age of 90 and two at 82, while three brothers died at the ages of 97, 90, and 65.

FOREIGN BODY IN RECTUM.

DR. M. HONIGSBERGER (Birmingham) writes: The following case is so unusual that it may possibly be of interest to record it: I was consulted by a man of 65 years, a miner, who complained that he had been awakened at 3 a.m. by profuse diarrhoea without pain or vomiting, but when he got out of bed he could hardly walk because of a severe pain in his rectum, neither could he sit down. Having known of a similar case where the cause was a fish bone in the rectum, I expected to find this the cause, and on rectal examination I found something resembling a fish bone, but it was bent at such an angle and non-flexible and so impacted in the rectal wall that I had great difficulty in extracting it. Instead of a fish bone, however, the foreign body proved to be a bent twig of a tree 2½ in. long and almost 1/4 in. diameter. The twig was unbendable. The patient was unable to explain how it got there. He is not a mental case, nor a drunkard, and it seems almost inconceivable that a twig of such a size and so unflexible could be swallowed and the swallower not be aware that something abnormal had been gulped down; moreover, the twig must have been propelled throughout the entire length of the alimentary tract (except the last part) in its longitudinal axis, for the patient has had no abdominal pain lately.

THE CHEWING OF GUM.

DR. W. J. BURNS SELKIRK (Birmingham) writes: Falling into thought, I surmised that there must be some reason for the chewing of gum, even though it be not formulated. Experimenting, I find it has a decided sedative action; hence, perhaps, its abounding utility in the land of hustle. Presumably, it is analagous in effect to the baby's comforter. It seems capable of producing even the state of mind of the ruminating cow and its Buddhistic calm. With it one may endure a prolonged surgery attendance with good-humoured tolerance, and the evil chances of the putting green cease to irritate and become curiously amusing, to the extent almost of inducing a dual personality. I would not be surprised if it could relieve even the hard-pressed surgeon of the necessity for expletives. It may be offered as a substitute to the excessive cigarette smoker, and for the chocolate habit; for frayed nerves and insomnia as a sedative. The material has a considerable sale even in this country. Why?

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

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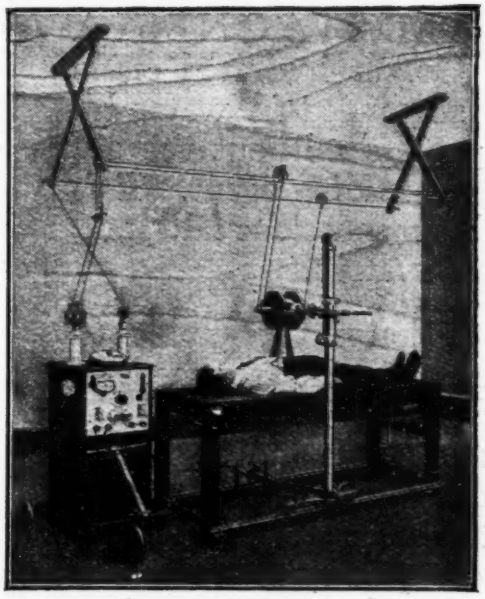

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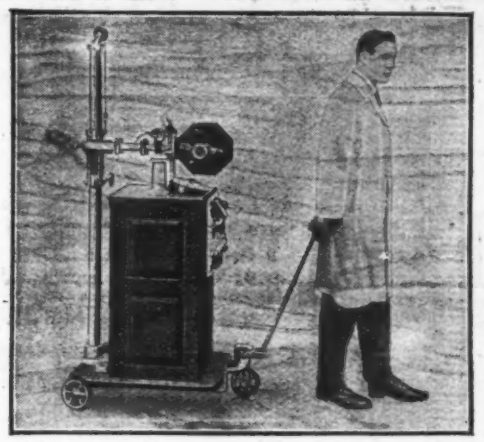

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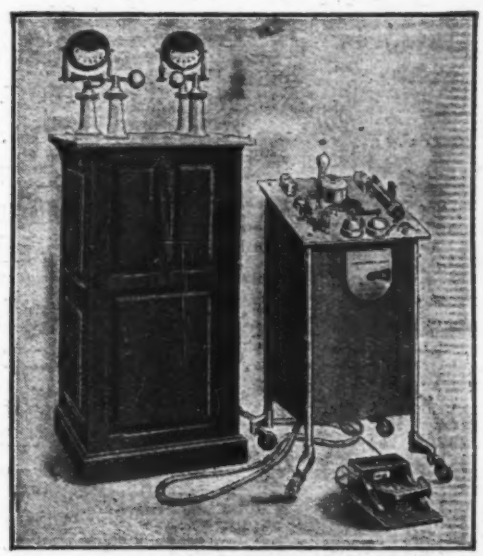

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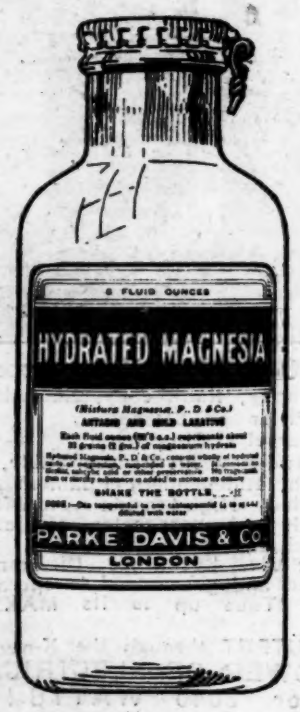

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